South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: **NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL ASSESSMENT**

PROJECT TITLE: **PROPOSED AMENDED REGULATION XX: REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)**

In accordance with the California Environmental Quality Act (CEQA), the South Coast Air Quality Management District (SCAQMD), as the Lead Agency, has prepared this Notice of Preparation (NOP) and Initial Study (IS). This NOP serves two purposes: 1) to solicit information on the scope of the environmental analysis for the proposed project, and 2) to notify the public that the SCAQMD will prepare a Draft Environmental Assessment (EA) to further assess potential environmental impacts that may result from implementing the proposed project.

This letter, NOP and the attached IS are not SCAQMD applications or forms requiring a response from you. Their purpose is simply to provide information to you on the above project. If the proposed project has no bearing on you or your organization, no action on your part is necessary.

Comments focusing on your area of expertise, your agency's area of jurisdiction, or issues relative to the environmental analysis should be addressed to Ms. Barbara Radlein (c/o CEQA) at the address shown above, or sent by FAX to (909) 396-3324 or by e-mail to bradlein@aqmd.gov. Comments must be received no later than 5:00 PM on Tuesday, July 21, 2009. Please include the name and phone number of the contact person for your agency. Questions relative to the proposed amended regulation should be directed to Ms. Minh Pham at (909) 396-2613.

The Public Hearing for the proposed amended regulation is scheduled for November 6, 2009. (Note: Public meeting dates are subject to change).

Date: June 18, 2009 **Signature:** Steve Smith

Steve Smith, Ph.D.
Program Supervisor
Planning, Rules, and Area Sources

Reference: California Code of Regulations, Title 14, Sections 15082(a), 15103, and 15375

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive, Diamond Bar, CA 91765-4178

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL ASSESSMENT

Project Title:
Draft Environmental Assessment for Proposed Amended Regulation XX – Regional Clean Air Incentives Market (RECLAIM)

Project Location:
South Coast Air Quality Management District (SCAQMD) area of jurisdiction consisting of the four-county South Coast Air Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin and the Mojave Desert Air Basin

Description of Nature, Purpose, and Beneficiaries of Project:
SCAQMD staff is proposing amendments to Regulation XX – Regional Clean Air Incentives Market (RECLAIM), Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), to reduce the allowable SOx emission limits based on current Best Available Retrofit Control Technology (BARCT) for the following industrial equipment and processes: 1) fluid catalytic cracking units (FCCUs); 2) refinery boilers and heaters; 3) sulfur recovery – tail gas treatment units; 4) sulfuric acid manufacturing process; 5) container glass manufacturing process; 6) coke calcining; and, 7) portland cement manufacturing. Additional amendments are proposed to establish procedures and criteria for reducing RECLAIM Trading Credits (RTCs) and RTC adjustment factors for year 2013 and later. Other minor changes are proposed for clarity and consistency throughout the regulation. The Initial Study identifies the topics of aesthetics, air quality, energy, hydrology and water quality, hazards and hazardous materials, and transportation/traffic as areas that may be adversely affected by the proposed project. Impacts to these environmental areas will be further analyzed in the Draft EA.

Lead Agency:	**Division:**
South Coast Air Quality Management District	Planning, Rule Development and Area Sources

Initial Study and all supporting documentation are available at:	**or by calling:**	**or by accessing the SCAQMD's website at:**
SCAQMD Headquarters 21865 Copley Drive Diamond Bar, CA 91765	(909) 396-2039	http://www.aqmd.gov/ceqa/aqmd.html

The Public Notice of Preparation is provided through the following:

☑ Los Angeles Times (June 19, 2009) ☑ AQMD Website ☑ AQMD Mailing List

Initial Study 30-day Review Period:
June 19, 2009 – July 21, 2009

Scheduled Public Meeting Dates (subject to change):
Public Workshop/CEQA Scoping Meeting: June 23, 2009, 2:00pm to 4:00pm; SCAQMD Headquarters
SCAQMD Governing Board Hearing: November 6, 2009, 9:00 a.m.; SCAQMD Headquarters

The proposed project may have statewide, regional or areawide significance; therefore, a CEQA scoping meeting is required (pursuant to Public Resources Code §21083.9(a)(2)).

Send CEQA Comments to:	**Phone:**	**Email:**	**Fax:**
Ms. Barbara Radlein	(909) 396-2716	bradlein@aqmd.gov	(909) 396-3324

Direct Questions on Proposed Amendments:	**Phone:**	**Email:**	**Fax:**
Ms. Minh Pham	(909) 396-2613	mpham@aqmd.gov	(909) 396-3324

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Initial Study for Proposed Amended Regulation XX – Regional Clean Air Incentives Market (RECLAIM)

June 2009

SCAQMD No. 06182009BAR
State Clearinghouse No: To Be Determined

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INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977[1] as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin, referred to herein as the district. By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the district[2]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP[3]. The 2007 AQMP concluded that major reductions in emissions of volatile organic compounds (VOCs), oxides of sulfur (SOx) and oxides of nitrogen (NOx) are necessary to attain the air quality standards for ozone (the key ingredient of smog) and particulate matter (PM10 and PM2.5). Ozone, a criteria pollutant which has been shown to adversely affect human health, is formed when VOCs react with NOx in the atmosphere. VOCs, NOx, SOx (especially sulfur dioxide) and ammonia also contribute to the formation of PM10 and PM2.5.

The Basin is designated by the United States Environmental Protection Agency (EPA) as a non-attainment area for PM2.5 emissions because the federal PM2.5 standards have been exceeded. For this reason, the SCAQMD is required to evaluate all feasible control measures in order to reduce direct PM2.5 emissions, as well as PM2.5 precursors, such as NOx and SOx. The 2007 AQMP contains a multi-pollutant control strategy to achieve attainment with the federal PM2.5 standards with NOx and SOx reductions identified as the two most effective tools in reaching attainment with the PM2.5 standards.

As part of this ongoing PM2.5 reduction effort, SCAQMD staff is proposing amendments to Regulation XX – Regional Clean Air Incentives Market (RECLAIM) to achieve additional SOx emission reductions as outlined in the 2007 AQMP in Control Measure CMB-02: Further SOx Reduction for RECLAIM (CM #2007CMB-02). Amendments are proposed to Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), to address Best Available Retrofit Control Technology (BARCT) requirements, which may require installation or modification of SOx emission control equipment. Other changes proposed are administrative in nature and include minor clarifications for continuity.

The primary focus of the proposed project is to bring the SOx RECLAIM program up-to-date with the latest BARCT requirements to achieve, at a minimum, the proposed SOx emission reductions in CM #2007CMB-02 (at least 2.9 tons per day by compliance year 2014). The proposed project may achieve additional SOx emission reductions depending on the actual BARCT SOx emission control efficiencies. The proposed project will affect the following types of equipment and processes at SOx RECLAIM facilities: 1) petroleum coke calciners; 2) cement kilns; 3) coal-fired boiler (cogeneration); 4) container glass melting furnace; 5) diesel combustion; 6) fluid catalytic cracking units (FCCUs); 7) refinery boilers/heaters; 8) sulfur recovery units/tail gas treatment units; and, 9) sulfuric acid manufacturing. Additional amendments are proposed to establish procedures and criteria for reducing RECLAIM Trading Credits (RTCs) and RTC adjustment factors for year 2013 and later. Other minor changes are proposed for clarity and consistency throughout the proposed amended rules.

[1] The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health & Safety Code, §§40400-40540).
[2] Health & Safety Code, §40460 (a).
[3] Health & Safety Code, §40440 (a).

The proposed project is estimated to reduce at least 2.9 tons per day of SOx emissions or more by 2014. Despite this projected environmental benefit to air quality, this Initial Study, prepared pursuant to the California Environmental Quality Act (CEQA), identifies the following environmental topics as areas that may be adversely affected by the proposed project: aesthetics, air quality, energy, hydrology and water quality, hazards and hazardous materials, and transportation/traffic. A Draft Environmental Assessment (EA) will be prepared to analyze further whether the potential impacts to these environmental topics are significant. Any other potentially significant environmental impacts identified through this Notice of Preparation/Initial Study process will also be analyzed in the Draft EA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The proposed amendments to Regulation XX are considered a "project" as defined by CEQA. CEQA requires that the potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented if feasible. The purpose of the CEQA process is to inform the SCAQMD's Governing Board, public agencies, and interested parties of potential adverse environmental impacts that could result from implementing the proposed project and to identify feasible mitigation measures or alternatives, when an impact is significant.

California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the Secretary of Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110. Pursuant to Rule 110 (the rule which implements the SCAQMD's certified regulatory program), SCAQMD is preparing a Draft Environmental Assessment (EA) to evaluate potential adverse impacts from the proposed project.

The SCAQMD as Lead Agency for the proposed project, has prepared this Initial Study (which includes an Environmental Checklist and project description). The Environmental Checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. The Initial Study is also intended to provide information about the proposed project to other public agencies and interested parties prior to the release of the Draft Environmental Assessment (EA). Written comments on the scope of the environmental analysis will be considered (if received by the SCAQMD during the 30-day review period) when preparing the Draft EA.

PROJECT LOCATION

The proposed amendments to Regulation XX would apply to equipment and processes operated at SOx RECLAIM facilities located throughout the entire SCAQMD jurisdiction. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the

SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).

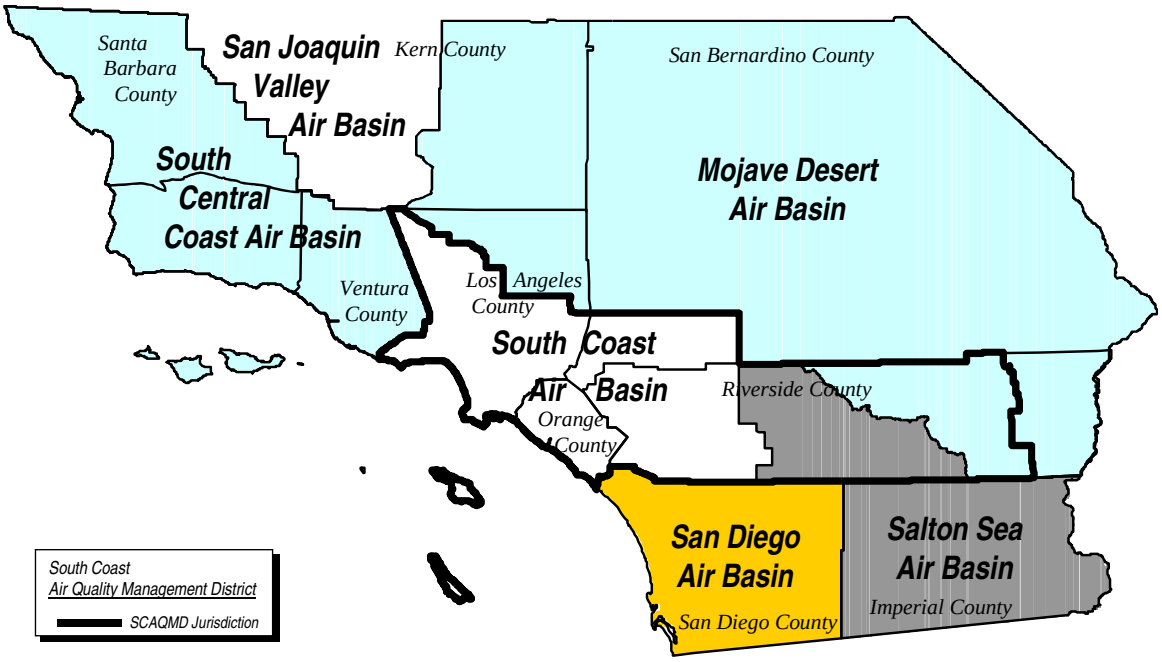

Figure 1-1
South Coast Air Quality Management District

PROJECT BACKGROUND

Adopted in October 1993, Regulation XX – RECLAIM, is comprised of 11 rules which contain a declining cap and trade mechanism to reduce NOx and SOx emissions from the largest stationary sources in the Basin. The portion of Regulation XX that focuses on reducing NOx emissions is referred to as "NOx RECLAIM" while the portion that focuses on reducing SOx emissions is referred to as "SOx RECLAIM." Regulation XX contains applicability requirements, NOx and SOx facility allocations, general requirements, as well as monitoring, reporting, and recordkeeping requirements for NOx and SOx sources located at RECLAIM facilities. The RECLAIM program started with 41 SOx facilities and 392 NOx facilities, but by the end of the 2005 compliance year, the program is populated with 33 SOx facilities and 304 NOx facilities. The reduction in the number of facilities participating in the RECLAIM program since inception has been primarily due to facility shutdowns.

Under the SOx RECLAIM program, the RECLAIM facilities were issued annual allocations of SOx emissions (also known as facility caps), which declined annually from 1993 until 2003 and remained constant after 2003. In 1993, annual allocations were issued to the RECLAIM facilities and the facility cap reflected BARCT in effect at that time. SCAQMD staff has since

conducted a BARCT reassessment for NOx in 2005, but not for SOx. A BARCT reassessment is now necessary for SOx RECLAIM to assure that the participating facilities will continue to achieve emission reductions as expeditiously as possible. Under the RECLAIM program, the facilities have the flexibility to install air pollution control equipment, change method of operations, or purchase RTCs to meet BARCT levels.

PROJECT OBJECTIVE

The primary focus of the proposed project is to bring the SOx RECLAIM program up-to-date with the latest BARCT requirements to achieve, at a minimum, the proposed SOx emission reductions in CM #2007CMB-02 (at least 2.9 tons per day by compliance year 2014). Another objective of the proposed project is to establish procedures and criteria for reducing RTCs and RTC adjustment factors for year 2013 and later. Other minor changes are proposed for clarity and consistency throughout the proposed amended rules. The proposed project is estimated to reduce at least 2.9 tons per day of SOx emissions by 2014, which will assist the SCAQMD with attaining state and federal ambient air quality standards for PM10 and PM2.5.

PROJECT DESCRIPTION

The proposed project will affect the following types of equipment and processes at 12 SOx RECLAIM facilities: 1) petroleum coke calciners; 2) cement kilns; 3) coal-fired boiler (cogeneration); 4) container glass melting furnace; 5) diesel combustion; 6) fluid catalytic cracking units; 7) refinery boilers/heaters; 8) sulfur recovery units/tail gas treatment units; and, 9) sulfuric acid manufacturing. The following is a summary of the key proposed amendments to Rule 2002. Other minor changes are also proposed for clarity and consistency throughout the rule. A copy of the proposed amended rule can be found in Appendix A.

Proposed Amended Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx)

<u>RECLAIM Allocations - subdivision (b)</u>

Cross-references in paragraph (b)(3) have been modified for clarity and continuity with the proposed revisions in subdivision (f) regarding annual allocations for NOx and SOx and adjustments to RTC holdings.

<u>Establishment of Starting Allocations - subdivision (c)</u>

Cross-references to procedures for reducing SOx RTCs for compliance year 2014 and later have been added to paragraph (c)(3) and subparagraph (c)(5)(C).

<u>Annual Allocations for NOx and SOx and Adjustments to RTC Holdings - subdivision (f)</u>

In accordance with the analysis prepared for Control Measure #2007CMB-02 in the 2007 AQMP which estimates an additional reduction in SOx RECLAIM emissions of 2.9 tons per day by 2014, new criteria, procedures, and adjustment factors for adjusting SOx RTC holdings have been added to paragraph (f)(2) in order to achieve these projected emission reductions from SOx RTC holders by compliance year 2013 and later. The actual amount of reductions will depend on the analysis of what is technically and economically feasible. It is expected that the adjustment factors for compliance year 2013 and later will be developed based on current BARCT evaluations and are expected to be within the range of three tons per day to eight tons per day. The proposed changes would also comply with the BARCT requirements applicable to market-based incentive programs. Specifically, the BARCT adjustment that will be made to

each facility's holdings will be implemented on a programmatic basis, with an equal percentage reduction to all RTC holdings beginning in compliance year 2013.

RECLAIM SOx 2014 BARCT – Table 4

New Table 4 has been added to Rule 2002 to establish BARCT for petroleum coke calciners, cement kilns and coal-fired boilers, container glass melting furnaces, diesel combustion, fluid catalytic cracking units, refinery boilers and heaters, sulfur recovery units/tail gas treatment units, and sulfuric acid manufacturing. Currently, Table 4 contains a list of the control technologies that could be used to achieve BARCT. However, Table 4 does not yet contain the BARCT emission rates, for all of the aforementioned equipment except diesel combustion, which has a limit of 15 parts per million by volume (ppmv) to be consistent with existent emission limits in SCAQMD Rule 431.2 – Sulfur Content of Liquid Fuels. Initial estimates show that a range of SOx emission reductions between three tons per day to eight tons per day are under consideration for the proposed project, but the actual amount of SOx reductions will depend on the analysis of what is technically and economically feasible. As the rule development process progresses, eventually Table 4 will contain BARCT emission rates appropriate to the basic equipment listed.

TECHNOLOGY OVERVIEW

SOx Emission Sources

The SOx RECLAIM program consists of 33 facilities as of the 2005 Compliance Year. Of these 33, 12 RECLAIM facilities represent the top emitters of SOx (i.e., emit 95 percent of the total SOx emissions from all RECLAIM facilities). For this reason, the proposed project will focus on reducing SOx emissions from these top emitters. They are:

- Six refineries: BP (Carson location); ConocoPhillips (Wilmington location); Chevron; ExxonMobil; Ultramar (also referred to as Valero); and, Equilon (also referred to as Tesoro)
- Two sulfuric acid plants: Rhodia Inc. and ConocoPhillips (Carson location)
- One coke calciner plant: BP (Wilmington location)
- One cement manufacturing plant: California Portland Cement
- Two container glass manufacturing plants: Owens-Brockway Glass Container Inc. and Saint-Gobain Containers Inc.

On an equipment/process basis, Table 1-1 shows the distribution of SOx emissions with respect to the equipment/processes at these 12 SOx RECLAIM facilities. These source categories are responsible for 80 percent of the facility emissions.

Table 1-1
Distribution of SOx Emissions at RECLAIM Facilities By Equipment/Process

Equipment/Process	Percentage of Emissions
FCCUs	33%
Refinery Process Heaters and Boilers	31%
Sulfuric Acid Manufacturing	12%
Sulfur Recovery Units and Tail Gas Units	10%
Cement Kilns and Glass Melting Furnaces	7%
Other Miscellaneous Processes/Equipment	7%

Reference: Baseline emissions from Compliance Year 2005

Of the 12 facilities, six refineries operate one FCCU each, one sulfur recovery and tail gas unit each, and a multitude of refinery process heaters and boilers. The quantity of SOx emissions from the six refineries alone comprise approximately 74 percent of the total SOx emitted from the 12 RECLAIM facilities that will be affected by the proposed project. The remaining six facilities emit 26 percent of the total.

To appreciate the mechanics of SOx control equipment and techniques, it is necessary to first understand how SOx emissions are generated from the equipment and processes listed in Table 1-1.

FCCUs

The purpose of an FCCU at a refinery is to convert or "crack" heavy oils (hydrocarbons), with the assistance of a catalyst, into gasoline and lighter petroleum products. Each FCCU consists of three main components: a reaction chamber, a catalyst regenerator and a fractionator. All six refineries each operate one FCCU.

The cracking process begins in the reaction chamber where fresh catalyst is mixed with pre-heated heavy oils (crude) known as the fresh feed. The catalyst typically used for cracking is a fine powder made up of tiny particles with surfaces covered by several microscopic pores. A high heat-generating chemical reaction occurs that converts the heavy oil liquid into a cracked hydrocarbon vapor mixed with catalyst. As the cracking reaction progresses, the cracked hydrocarbon vapor is routed to a distillation column or fractionator for further separation into lighter hydrocarbon components than crude such as light gases, gasoline, light gas oil, and cycle oil.

Towards the end of the reaction, the catalyst surface becomes inactive or spent because the pores are gradually coated with a combination of heavy oil liquid residue and solid carbon (coke), thereby reducing its efficiency or ability to react with fresh heavy liquid oil in the feed. To prepare the spent catalyst for re-use, the remaining oil residue is removed by steam stripping. The spent catalyst is later cycled to the second component of the FCCU, the regenerator, where hot air burns the coke layer off of the surface of each catalyst particle to produce reactivated or regenerated catalyst. Subsequently, the regenerated catalyst is cycled back to the reaction chamber and mixed with more fresh heavy liquid oil feed. Thus, as the heavy oils enter the cracking process through the reaction chamber and exit the fractionator as lighter components, the catalyst continuously circulates between the reaction chamber and the regenerator.

During the regeneration cycle, large quantities of catalyst are lost in the form of catalyst fines or particulates thus making FCCUs a major source of primary particulate emissions at refineries. In addition, particulate precursor emissions such as SOx (because crude oil naturally contains sulfur) and NOx, additional secondary particulates (i.e., formed as a result of various chemical reactions), plus carbon monoxide (CO) and carbon dioxide (CO2) are produced due to coke burn-off during the regenerator process.

The potential available control technologies to reduce SOx emissions from a FCCU are:

1. Processing of low sulfur feed stocks;
2. Feed hydro-treating;
3. Flue gas scrubbing via wet gas scrubbers;

4. Using SOx reducing catalyst; or,
5. Using a combination of these control technologies.

The type of SOx control option to be utilized in response to the proposed project for FCCUs will depend on each refinery's individual operations and the current control technologies and techniques in place. For example, all six refineries already process low sulfur feed stocks and utilize feed hydrotreating for their FCCUs. Thus, the Draft EA will evaluate the possibility that each refinery may rely on wet gas scrubbers or SOx reducing additives or a combination of both control options in order to comply with the BARCT requirements for the FCCU portion of the proposed project.

Refinery Process Heaters and Boilers

Refinery process heaters and boilers are used extensively throughout various processes in refinery operations such as distillation, hydrotreating, fluid catalytic cracking, alkylation, reforming, and delayed coking. There are approximately 300 refinery process heaters and boilers operating throughout the six aforementioned refineries and the top 16 emitters in this category collectively emitted about one ton per day of SOx in 2005. Refinery process heaters and boilers are primarily fueled by refinery gas, one of several products generated at the refinery. In addition, most of the refinery process heaters and boilers are designed to also operate on natural gas, but liquid or solid fuels are rarely used.

SOx is created from the combustion of fuel that contains sulfur or sulfur compounds. To reduce SOx emissions from these refinery process heaters and boilers, the refinery operators can opt to use lower sulfur-containing fuels to reduce the sulfur input on the front end (e.g., fuel gas treatment), or to install flue gas scrubber (wet scrubber) to reduce SOx emissions in the flue gas after it exits the refinery process heaters and boilers on the back end. The Draft EA will evaluate the possibility that each refinery may rely on either control option in order to comply with the refinery process heaters and boilers portion of the proposed project.

Sulfur Recovery Units and Tail Gas Units

Because sulfur is a naturally occurring and undesirable component of crude oil, refineries employ a sulfur recovery system to maximize sulfur removal. A typical sulfur removal or recovery system will include a sulfur recovery unit (e.g., Claus unit) followed by a tail gas treatment unit (e.g., amine treating) for maximum removal of hydrogen sulfide (H2S). A Claus unit consists of a reactor, catalytic converters and condensers. Two chemical reactions occur in a Claus unit. The first reaction occurs in the reactor, where a portion of H2S reacts with air to form sulfur dioxide (SO2) followed by a second reaction in the catalytic converters where SO2 reacts with H2S to form liquid elemental sulfur. Side reactions producing carbonyl sulfide (COS) and carbon disulfide (CS2) can also occur. These side reactions are problematic for Claus plant operators because COS and CS2 cannot be easily converted to elemental sulfur and carbon dioxide. Liquid sulfur is recovered after the final condenser. The combination of two converters with two condensers in series will generally remove as much as 95 percent of the sulfur from the incoming acid gas. To increase removal efficiency, some newer sulfur recovery units may be designed with three to four sets of converters and condensers.

To recover the remaining sulfur compounds after the final pass through the last condenser, the gas is sent to a tail gas treatment process such as a SCOT or Wellman-Lord treatment process. For example, the SCOT tail gas treatment is a process where the tail gas is sent to a catalytic reactor and the sulfur compounds in the tail gas are converted to H2S. The H2S is absorbed by a

solution of amine or diethanol amine (DEA) in the H2S absorber, steam-stripped from the absorbent solution in the H2S stripper, concentrated, and recycled to the front end of the sulfur recovery unit. This approach typically increases the overall sulfur recovery efficiency of the Claus unit to 99.8 percent or higher. However, the fresh acid gas feed rate to the sulfur recovery unit is reduced by the amount of recycled stream, which reduces the capacity of the sulfur recovery unit. The residual H2S in the treated gas from the absorber is typically vented to a thermal oxidizer where it is oxidized to sulfur dioxide (SO2) before venting to the atmosphere.

The Wellman-Lord tail gas treatment process is when the sulfur compounds in the tail gas are first incinerated to oxidize to SO2. After the incinerator, the tail gas enters a SO2 absorber, where the SO2 is absorbed in a sodium sulfite (Na_2SO_3) solution to form sodium bisulfite ($NaHSO_3$) and sodium pyrosulfate ($Na_2S_2O_5$). The absorbent rich in SO_2 is then stripped, and the SO_2 is recycled back to the beginning of the Claus unit. The residual sulfur compounds in the treated tail gas from the SO2 absorber is then vented to a thermal oxidizer where it is oxidized to SO2 before venting to the atmosphere.

There are three main strategies that can be employed to further reduce SO2 emissions from each sulfur recovery/tail gas treatment unit operating at the six refineries: 1) increase the efficiency of the sulfur recovery unit; 2) improve the efficiency of the tail gas treatment process; and, 3) install a wet gas scrubber as an alternative to the thermal oxidizer[4]. The type of SOx control option to be utilized in response to this portion of the proposed project will depend on each refinery's individual operations and the current control technologies and techniques in place. Thus, the Draft EA will evaluate the possibility that each refinery may rely on the SOx control strategies identified above in order to comply with the sulfur recovery/tail gas treatment unit portion of the proposed project.

Sulfuric Acid Manufacturing

Sulfuric acid is a commodity chemical that is used in manufacturing phosphate and nitrogen fertilizers, detergents, paper, rust removers. It is also used extensively in automobile manufacturing, metal smelting, water treatment and oil refining processes.

There are two facilities in the Basin that manufacture sulfuric acid. The sulfuric acid manufacturing process includes three basic operations. First, the sulfur in the feedstock is oxidized to sulfur dioxide (SO2) in a furnace. The SO2 is then catalytically oxidized (using vanadium as the catalyst) to sulfur trioxide (SO3) in a multi-staged catalytic reactor (or converter). Lastly, the sulfur trioxide is absorbed (e.g., combined with water) to create a strong sulfuric acid (H_2SO_4) solution.

In a dual or two-stage absorption process, the SO3 gas formed from the primary converter is sent to a first absorber where most of the SO3 is removed to form H_2SO_4. The remaining unconverted SO2 and SO3 are directed to a secondary converter and absorber set to further remove H_2SO_4.

The conversion of SO2 to H_2SO_4 is an incomplete, exothermic reaction which means that there is always one to two percent of SO2 that does not get converted to H_2SO_4. The success of conversion is affected by the number of stages in the catalytic converter, the amount of catalyst used, temperature and pressure, and the concentrations of the reactants, SO2 and elemental

[4] All six refineries have thermal oxidizers at the end of their tail gas treatment units.

oxygen (O_2). The remaining SO2 in the exhaust gas stream from the absorbers is vented to ESPs, scrubbers, and mist eliminators to remove SO_2 and acid mist prior to venting to the atmosphere. Because the conversion of SO2 to H_2SO_4 is exothermic (e.g., produces a great deal of heat), the heat is recovered and converted into useful energy for operating steam-driven compressors, waste heat boilers, and heat exchangers. The Draft EA will evaluate the possibility that each sulfuric acid manufacturing facility may rely on wet gas scrubbers in order to comply with the BARCT requirements for this portion of the proposed project

Container Glass Melting Furnace

A container glass melting furnace is the main equipment used for manufacturing glass products, such as bottles, glass wares, pressed and blown glass, tempered glass, and safety glass. The manufacturing process consists of four phases: 1) preparation of the raw materials; 2) melting the mixture of raw materials in the furnace; 3) forming the desired shape; and, 4) finishing the final product. Raw materials, such as sand, limestone, and soda ash, are crushed and mixed with cullets (recycled glass pieces) to ensure homogeneous melting. The raw materials mixture is then conveyed to a continuous regenerative side-port melting furnace. As the mixture enters the furnace through a feeder, it melts and blends with the molten glass already in the furnace, and eventually flows to a refiner section, forming machine, and annealing ovens. The final products undergo inspection, testing, packaging and storage. Any damaged or undesirable glass is transferred back to be recycled as cullets.

SOx is generated from a container glass melting furnace in two ways: 1) during the decomposition of the sulfates in the raw materials; and, 2) from combusting fuel (that contains sulfur) to generate high heating values in the furnace. The container glass melting furnace contributes over 99 percent of the total SOx emissions from a glass manufacturing plant.

SOx emissions from a container glass melting furnace are typically controlled by a scrubber followed by a dry electrostatic precipitator (ESP) to control particulates. Two glass melting facilities are in the SOx RECLAIM program, but only one of these facilities is currently operating. The type of SOx control option to be utilized in response to the proposed project will depend on this facility's individual operations and the current control technologies and techniques in place. Thus, the Draft EA will evaluate the possibility that operators of the glass melting facility may rely on a wet gas scrubber or dry gas scrubber to further control SOx emissions in order to comply with the BARCT requirements for the FCCU portion of the proposed project.

Petroleum Coke Calciner

Petroleum coke, the heaviest portion of crude oil, cannot be recovered in the normal oil refinining process. Instead, it is processed in a delayed coker unit to generate a carbonaceous solid referred to as "green coke," a commodity. To improve quality of the product, if the green coke has a low metals content, it will be sent to a calciner to make calcined petroleum coke. Calcined petroleum coke can be used to make anodes for the aluminum, steel, and titanium smelting industry. If the green coke has a high metals content, it is used a fuel grade coke by the fuel, cement, steel, calciner and specialty chemicals industries.

The process of making calcined petroleum coke begins when the green coke feed from the delayed coker unit is screened and transported to the calciner unit where it is stored in a covered coke storage barn. The screened and dried green coke is introduced into the top end of a rotary kiln and is tumbled by rotation under high temperatures that range between 2,000 and 2,500

degrees Fahrenheit (^{o}F). The rotary kiln relies on gravity to move coke through the kiln countercurrent to a hot stream of combustion air produced by the combustion of natural gas or fuel oil. As the green coke flows to the bottom of the kiln, it rests in the kiln for approximately one additional hour to eliminate any remaining moisture, impurities, and hydrocarbons. Once discharged from the kiln, the calcined coke is dropped into a cooling chamber, where it is quenched with water, treated with de-dusting agents to minimize dust, carried by conveyors to storage tanks. Eventually, the calcined coke is transported by truck to the Port of Long Beach for export, or is loaded onto railcars for shipping to domestic customers.

Because sulfur is a naturally occurring and undesirable component of crude oil, it remains a component of the green coke after it exits the delayed coking unit. As the green coke is processed under high heat conditions in the rotary kiln, SOx emissions are generated. SOx is also generated from combusting fuel oil (that contains sulfur) to generate high heating values in the rotary kiln.

There is only one petroleum coke calciner in the Basin and the SOx emissions from the unit are controlled by a dry scrubber. The existing control system also includes a spray dryer, a reverse-air baghouse, a slurry storage system, a slurry circulating system, and a pneumatic conveying system. Calcium hydroxide (CaOH) slurry is the absorbing medium for SO2 control. The type of SOx control option to be utilized in response to the proposed project will depend on this facility's individual operations and the current control technologies and techniques in place. Thus, the Draft EA will evaluate the possibility that operators of the petroleum coke calcining facility may rely on a wet gas scrubber to further control SOx emissions in order to comply with the BARCT requirements for the petroleum coke calcining portion of the proposed project.

Cement Kiln and Coal-Fired Boiler

Of the two Portland cement manufacturing facilities located in the Basin, California Portland Cement Company (CPCC) and TXI Riverside Cement Company (TXI), the quantity of SOx emissions from CPCC at 100.5 tons per year is substantially greater than TXI's SOx emissions at 0.7 ton per year for compliance year 2005. Because the proposed project is directed at reducing emissions from the top 12 SOx emitters, the following discussion is limited to reducing SOx emissions at the CPCC facility.

CPCC manufactures gray Portland cement in two cement kilns and follows a four-step process of: 1) acquiring raw materials; 2) preparing the raw materials to be blended into a raw mix; 3) pyroprocessing of the raw mix to make clinker; and, 4) grinding and milling clinker into cement. The raw materials used for manufacturing cement include calcium, silica, alumina and iron, with calcium having the highest concentration. These raw materials are obtained from a limestone quarry for calcium, sand for silica; and shale and clay for alumina and silica.

The raw materials are crushed, milled, blended into a raw mix and stored. Primary, secondary and tertiary crushers are used to crush the raw materials until they are about ¾-inch or smaller in size. Raw materials are then conveyed to rock storage silos. Belt conveyors are typically used for this transport. Roller mills or ball mills are used to blend and pulverize raw materials into fine powder. Pneumatic conveyors are typically used to transport the fine raw mix to be stored in silos until it is ready to be pyroprocessed.

The pyroprocess in a kiln consists of three phases during which clinker is produced from raw materials undergoing physical changes and chemical reactions. The first phase in a kiln, the

drying and pre-heating zone, operates at a temperature between 70 ^{o}F and 1650 ^{o}F and evaporates any remaining water in the raw mix of materials entering the kiln. Essentially this is the warm-up phase which stabilizes the temperature of the refractory fire brick inside the mouth opening of the kiln. The second phase, the calcining zone, operates at a temperature between 1100 ^{o}F and 1650 ^{o}F and converts the calcium carbonate from the limestone in the kiln feed into calcium oxide and releases carbon dioxide. During the third phase, the burning zone operates on average at 2200 ^{o}F to 2700 ^{o}F (though the flame temperature can exceed 3400 ^{o}F) during which several reactions and side reactions occur. The first reaction is calcium oxide (produced during the calcining zone) with silicate to form dicalcium silicate and the second reaction is the melting of calcium oxide with alumina and iron oxide to form the liquid phase of the materials. Despite the high temperatures, the constituents of the kiln feed do not combust during pyroprocessing. As the materials move towards the discharge end of the kiln, the temperature drops and eventually clinker nodules form and volatile constituents, such as sodium, potassium, chlorides, and sulfates, evaporate. Any excess calcium oxide reacts with dicalcium silicate to form tricalcium silicate. The red hot clinker exits the kiln, is cooled in the clinker cooler, passes through a crusher and is conveyed to storage for protection from moisture. Since clinker is water reactive, if it gets wet, it will set into concrete.

Heat used in CPCC's kilns is supplied through the combustion of different fuels such as coal, coke, oil, natural gas, and discarded automobile tires. The combustion gases are vented to a baghouse for dust control, and the collected dust is returned to the process or recycled if they meet certain criteria, or is discarded to landfills. Post-combustion control for SOx is not currently used at CPCC.

In addition to the cement kilns, another potential source of SOx emissions at CPCC could be from the coal-fired steam boiler due to the high sulfur content in coal. While CPCC reported that the coal-fired steam boiler has not been in operation since 2002, CPCC may begin operating the boiler again in the near future if circumstances in energy costs or fuel sources change.

SOx emissions from the cement kilns and coal-fired boiler are generated from the following: 1) combustion of sulfur in the fuel; and, 2) oxidation of sulfides (e.g. pyrites) in the raw materials entering the cement kiln. Fuel switching, process alterations, dry and wet scrubbers are commercially available control technologies to reduce SOx emissions. The type of scrubber to be utilized in response to the proposed project will depend on this facility's individual operations and how it will function with the current control technologies and techniques in place at CPCC (e.g., the baghouse). Thus, the Draft EA will evaluate the possibility that operators of CPCC may rely on a wet gas scrubber or dry gas scrubber, or a hybrid of dry gas scrubber with a baghouse, to further control SOx emissions in order to comply with the BARCT requirements for the cement kiln and coal-fired boiler portion of the proposed project.

SOx Control Technologies

On an equipment/process basis, Table 1-2 shows the control technologies that will be considered as part of the BARCT analysis for the proposed project. The following discussions will elaborate on the various technologies listed in Table 1-2.

Table 1-2
BARCT Control Technologies Under Consideration
for SOx Emitting Equipment/Processes

Equipment/Process	BARCT Control Technology
Petroleum Coke Calciner	Wet Gas Scrubber
Cement Kilns and Coal-Fired Boiler	1. Dry Gas Scrubber 2. Wet Gas Scrubber 3. Combination of both
Container Glass Melting Furnaces	1. Dry Gas Scrubber 2. Wet Gas Scrubber
FCCUs	1. Wet Gas Scrubber 2. SOx Reducing Catalyst 3. Combination of both
Refinery Process Heaters and Boilers	1. Wet Gas Scrubber 2. Fuel Gas Treatment
Sulfuric Acid Manufacturing	Wet Gas Scrubber
Sulfur Recovery Units/Tail Gas Units	1. Wet Gas Scrubber 2. Selective Oxidation Catalyst

Wet Gas Scrubbers

Wet gas scrubbers are used to control both SOx and particulate emissions and can be installed on petroleum coke calciners, cement kilns and coal-fired boilers, container glass melting furnaces, FCCUs, refinery process heaters and boilers, sulfuric acid manufacturing, and sulfur recovery units/tail gas units. There are two types of wet gas scrubbers: 1) caustic-based non-regenerative wet gas scrubber; and, 2) regenerative wet gas scrubber. Both systems can be used to achieve below a 25 ppmv SOx outlet concentration.

In non-regenerative wet gas scrubbing, caustic soda (sodium hydroxide - NaOH) or other alkaline reagents, such as soda ash and magnesium hydroxide, are used as an alkaline absorbing reagent (absorbent) to capture SO2 emissions. The absorbent captures SO2 and sulfuric acid mist (H2SO4) and converts it to various types of sulfites and sulfates (e.g., NaHSO3, Na2SO3, and Na2SO4). The absorbed sulfites and sulfates are later separated by a purge treatment system and the treated water, free of suspended solids, is either discharged or recycled.

One example of the caustic-based non-regenerative scrubbing system is the proprietary Electro Dynamic Venturi (EDV) scrubbing system offered by BELCO Technologies Corporation. An EDV scrubbing system consists of three main modules: 1) a spray tower module; 2) a filtering module; and, 3) a droplet separator module. The flue gas enters the spray tower module, which is an open tower with multiple layers of spray nozzles. The nozzles supply a high density stream of caustic water that is directed in a countercurrent flow to the gas flow and encircles, encompasses, wets, and saturates the flue gas. Multiple stages of liquid/gas absorption occur in the spray tower module and SO2 and acid mist are captured and converted to sulfites and sulfates. Large particles in the flue gas are also removed by impaction with the water droplets.

The flue gas saturated with heavy water droplets continues to move up the wet scrubber to the filtering module where the flue gas reaches super-saturation. At this point, water continues to

condense and the fine particles in the gas stream begin to cluster together, to form larger and heavier groups of particles. Next, the flue gas, super-saturated with heavy water droplets, enters the droplet separator module causing the water droplets to impinge on the walls of parallel spin vanes and drain to the bottom of the scrubber.

The spent caustic water purged from the wet scrubber is later processed in a purge treatment unit. The purge treatment unit contains a clarifier that removes suspended solids for disposal. The effluent from the clarifier is oxidized with agitated air which helps convert sulfites to sulfates and also reduces the chemical oxygen demand (COD) so that the effluent can be safely discharged to a waste water system.

A regenerative wet gas scrubber removes SO2 from the flue gas by using a buffer solution that can be regenerated. The buffer is then sent to a regenerative plant where the SO2 is extracted as concentrated SO2. The concentrated SO2 is then sent to a sulfur recovery unit (SRU) to recover the liquid SO2, sulfuric acid and elemental sulfur as a by-product. When the inlet SO2 concentrations are high, a substantial amount of sulfur-based by-products can be recovered and later sold as a commodity for use in the fertilizer, chemical, pulp and paper industries. For this reason, the use of regenerative wet gas scrubber is favored over non-regenerative wet gas scrubber.

One example of a regenerative scrubber is the proprietary LABSORB offered by BELCO Technologies Corporation. [5, 6] The LABSORB scrubbing process uses a patented non-organic aqueous solution of sodium phosphate salts as a buffer. This buffer is made from two common available products, caustic and phosphoric acid. The LABSORB scrubbing system is capable of reducing SOx to below 25 ppmv. The LABSORB system consists of: 1) a quench pre-scrubber; 2) an absorber; and, 3) a regeneration section which typically includes a stripper and a heat exchanger.

In the scrubbing side of the regenerative scrubbing system, the quench pre-scrubber is used to wash out any large particles that are carried over, plus any acid components in the flue gas such as hydrofluoric acid (HF), hydrochloric acid, and SO3. The absorption of SO2 is carried out in the absorber. The absorber typically consists of one single, high-efficiency packed bed scrubber filled with high-efficiency structural packing material. However, if the inlet SO2 concentration is low, a multiple-staged packed bed scrubber, or a spray-and-plate tower scrubber, may be used instead to achieve an outlet SO2 concentration of less than 25 ppmv.

The third step in the regenerative wet gas scrubbing system is the regenerative section in which the SO2-rich buffer stream is steam heated to evaporate the water from the buffer. The buffer stream is then sent to a stripper/condenser unit to separate the SO2 from the buffer. The buffer free of SO2 is returned to the buffer mixing tank while the condensed-SO2 gas stream is sent back to the SRU for further treatment.

[5] *Evaluating Wet Scrubbers*, Edwin H. Weaver of BELCO Technologies Corporation, Petroleum Technology Quarterly, Quarter 3, 2006.

[6] *A Logical and Cost Effective Approach for Reducing Refinery FCCU Emissions.* S.T. Eagleson, G. Billemeyer, N. Confuorto, and E. H. Weaver of BELCO, and S. Singhania and N. Singhania of Singhania Technical Services Pvt., India, Presented at PETROTECH 6th International Petroleum Conference in India, January 2005.

Dry Gas Scrubbers

Dry gas scrubbers are used to control SOx emissions and can be installed to control emissions from cement kilns and coal-fired boilers, container glass melting furnaces, and refinery boilers and heaters. In dry gas scrubbers, a dry calcium- and sodium-based alkaline powdered sorbent is used to absorb SO2 from the flue (outlet) gas stream. There are two types of dry scrubbers: 1) spray dryer scrubbers; and, 2) dry injection scrubbers.

A spray dryer scrubber is configured so that the reaction between SO2 in the flue gas and the dry sorbent takes place in a separate, dedicated reactor (or scrubber). A dry injection scrubber is configured so that the sorbent is injected directly via multiple injection ports into the SO2-producing equipment or ducting system. Spray dryer scrubbers can achieve about 80 percent to 90 percent SO2 removal efficiency, while dry injection scrubbers can achieve about 50 percent to 80 percent SO2 removal efficiency.

Dry gas scrubbers require high temperatures in the range of 1,800 ^{o}F to 2,000 ^{o}F in order to decompose the sorbent into porous solids with high adsorbing surface area to ensure efficient SO2 removal. Because particulates are formed during the dry gas scrubbing process, cyclones and ESPs are additional control equipment units that are typically installed downstream of a dry scrubber.

SOx Reducing Additives

To help reduce condensable particulate matter from sulfur, SOx reducing catalysts are used for reducing the production of SOx by-products in FCCUs. SOx reducing catalyst is a metal oxide compound such as aluminum oxide (Al_2O_3), magnesium oxide (MgO), vanadium pentoxide (V_2O_5) or a combination of the three that is added to the FCCU catalyst as it circulates throughout the reactor. In the regenerator of the FCCU, sulfur bearing coke is burned and SO2, CO, and CO2 by-products are formed. A portion of SO2 will react with excess oxygen and form SO3 which will either stay in the flue gas or react with the metal oxide in the SOx reducing catalyst to form metal sulfate. In the FCCU reactor, the metal sulfate will react with hydrogen to form either metal sulfide and water, or more metal oxide. In the steam stripper section of the FCCU reactor, metal sulfide reacts with steam to form metal oxide and hydrogen sulfide. The net effect of these reactions is that the quantity of SOx in the regenerator is typically reduced between 40 to 65 percent while the quantity of hydrogen sulfide (H_2S) in the reactor is increased. Generally, the increase in H_2S is handled by sulfur recovery processes located elsewhere within the refinery.

Fuel Gas Treatment

Currently, SCAQMD Rule 431.1 – Sulfur Content of Gaseous Fuels, limits the sulfur content in refinery fuel gas to 40 ppmv sulfur. This limit has already been incorporated in the SOx RECLAIM allocations and resulted in an emission factor of 6.76 pounds of SOx per million cubic feet of refinery gas. However, the sulfur content in refinery fuel gas may be further reduced to a range between 25 ppmv and 35 ppmv and the outlet SOx concentrations from refinery boilers and process heaters may also be limited to less than 20 ppmv by implementing efficiency improvements to fuel gas treatment.

Refinery fuel gas, commonly used for operating refinery process heaters and boilers, is treated in various acid gas processing units such as an amine or Merox treating unit for removal of sour components such as hydrogen sulfide, carbonyl sulfide, mercaptan, and ammonia. Lean amine is generally used as an absorbent. At the end of the process, the lean amine is regenerated to form

rich amine, and H2S is recovered in acid gas which is then fed to the sulfur recovery unit/tail gas treatment unit for more processing. By improving the efficiency of the amine treating unit to recover more sulfur from the inlet acid gas stream, the sulfur content in the refinery fuel gas at the outlet, and subsequently the SOx emissions from boilers and heaters that use these refinery fuel gases can be reduced.

Selective Oxidation Catalyst

EmeraChem Power LLC markets a proprietary catalytic gas treatment called selective oxidation catalyst "ESx" that is typically used as a sulfur reducing agent in conjunction with its "EMx NOx trap" catalyst to treat combustion exhaust gases from incinerators, process heaters, turbines and boilers. The ESx catalyst can also be used as part of SOx reduction for sulfur recovery units/tail gas treatment units. The ESx catalyst can reduce multiple sulfur species, including SO2, SO3, and H2S from the tail gas stream while also removing CO, VOC, and PM10 emissions. ESx catalyst is a platinum group metal catalyst that stores sulfur species and simultaneously assists in the catalytic oxidation of CO and VOCs. The ESx units are typically outfitted with multiple chambers such that at least one chamber is always in regeneration while the other units are working to store SOx. In the storage process, SO2 is oxidized to SO3 and is stored by EmeraChem's sorber. The catalyst regeneration process releases sulfur as SO2.

ALTERNATIVES

The Draft EA will discuss and compare alternatives to the proposed project as required by CEQA and by SCAQMD Rule 110. Alternatives must include realistic measures for attaining the basic objectives of the proposed project and provide a means for evaluating the comparative merits of each alternative. In addition, the range of alternatives must be sufficient to permit a reasoned choice and it need not include every conceivable project alternative. The key issue is whether the selection and discussion of alternatives fosters informed decision making and public participation. A CEQA document need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

SCAQMD Rule 110 does not impose any greater requirements for a discussion of project alternatives in an environmental assessment than is required for an Environmental Impact Report under CEQA. Alternatives will be developed based in part on the major components of the proposed rule. The rationale for selecting alternatives rests on CEQA's requirement to present "realistic" alternatives; that is alternatives that can actually be implemented. CEQA also requires an evaluation of a "No Project Alternative."

SCAQMD's policy document Environmental Justice Program Enhancements for fiscal year (FY) 2002-03, Enhancement II-1 recommends that all SCAQMD CEQA assessments include a feasible project alternative with the lowest air toxics emissions. In other words, for any major equipment or process type under the scope of the proposed project that creates a significant environmental impact, at least one alternative, where feasible, shall be considered from a "least harmful" perspective with regard to hazardous air emissions.

The Governing Board may choose to adopt any portion or all of any alternative presented in the EA. The Governing Board is able to adopt any portion or all of any of the alternatives presented because the impacts of each alternative will be fully disclosed to the public and the public will have the opportunity to comment on the alternatives and impacts generated by each alternative.

Written suggestions on potential project alternatives received during the comment period for the Initial Study will be considered when preparing the Draft EA.

CHAPTER 2 - ENVIRONMENTAL CHECKLIST

Introduction

General Information

Potentially Significant Impact Areas

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by adopting the proposed amendments to Regulation XX.

GENERAL INFORMATION

Project Title:	Proposed Amended Regulation XX – Regional Clean Air Incentives Market (RECLAIM)
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive, Diamond Bar, CA 91765
CEQA Contact Person:	Barbara Radlein, (909) 396-2716
Rule Contact Person:	Minh Pham, (909) 396-2613
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive, Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	SCAQMD staff is proposing amendments to Regulation XX – Regional Clean Air Incentives Market (RECLAIM), Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), to reduce the allowable SOx emission limits based on current Best Available Retrofit Control Technology (BARCT) for the following industrial equipment and processes: 1) fluid catalytic cracking units (FCCUs); 2) refinery boilers and heaters; 3) sulfur recovery – tail gas treatment units; 4) sulfuric acid manufacturing process; 5) container glass manufacturing process; 6) coke calcining; and, 7) portland cement manufacturing. Additional amendments are proposed to establish procedures and criteria for reducing RECLAIM Trading Credits (RTCs) and RTC adjustment factors for year 2013 and later. Other minor changes are proposed for clarity and consistency throughout the regulation. The Initial Study identifies the topics of aesthetics, air quality, energy, hydrology and water quality, hazards and hazardous materials, and transportation/traffic as areas that may be adversely affected by the proposed project. Impacts to these environmental areas will be further analyzed in the Draft EA.
Surrounding Land Uses and Setting:	Residential, but primarily commercial, industrial and/or institutional
Other Public Agencies Whose Approval is Required:	Not applicable

POTENTIALLY SIGNIFICANT IMPACT AREAS

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. Any checked items represent areas that may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☑	Aesthetics	☐	Geology and Soils	☐	Population and Housing
☐	Agricultural Resources	☑	Hazards and Hazardous Materials	☐	Public Services
☑	Air Quality	☑	Hydrology and Water Quality	☐	Recreation
☐	Biological Resources	☐	Land Use and Planning	☐	Solid/Hazardous Waste
☐	Cultural Resources	☐	Mineral Resources	☑	Transportation/Traffic
☑	Energy	☐	Noise	☑	Mandatory Findings

DETERMINATION
On the basis of this initial evaluation:

☐ I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

☑ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

☐ I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1)has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: June 18, 2009 **Signature:** Steve Smith

Steve Smith, Ph.D.
Program Supervisor, CEQA Section
Planning, Rules, and Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Since SOx is a precursor pollutant to fine particulate matter as PM10 and PM2.5, SCAQMD staff is proposing amendments to Regulation XX – RECLAIM to achieve additional SOx emission reductions as outlined in the 2007 AQMP. Specifically, amendments are proposed to SCAQMD Rule 2002, to address BARCT requirements, which may require installation or modification of SOx emission control equipment. Other changes proposed are administrative in nature and include minor clarifications for continuity.

The amendments proposed in Rule 2002 for the overall reductions in SOx RTC allocations, which include the anticipated feasible SOx emissions reductions due to compliance with proposed BARCT requirements, are expected to involve physical changes at affected facilities which may cause potentially significant impacts to the following environmental topics: aesthetics, air quality, energy, hydrology and water quality, hazards and hazardous materials, and transportation/traffic. Therefore, the type of emission reduction projects that may be undertaken to comply with the proposed project, primarily the reduced total amounts of SOx credits available in the RECLAIM program, are the main focus of the analysis in this Initial Study.

Preliminary review of the SCAQMD's RECLAIM database indicates that certain equipment at 12 SOx RECLAIM facilities are currently not operating at proposed BARCT levels. This analysis assumes that operators at RECLAIM facilities will elect to reduce emissions at their facilities through further control of emissions from equipment not operating at BARCT rather than purchasing SOx RTCs, as is currently allowed under the RECLAIM program. The rationale for this assumption is that controlling emissions from equipment not operating at BARCT will be the most cost effective approach and produces the most conservative analysis of secondary adverse environmental impacts.

The physical changes involved with the type of emission control strategies that are expected to occur focus on the installation of new or the modification of existing control equipment at the following stationary sources of SOx: petroleum coke calciners, cement kilns, coal-fired boiler, container glass melting furnaces, diesel combustion of liquid fuels, FCCUs, refinery boilers and process heaters, sulfur recovery units/tail gas treatment units, and sulfuric acid manufacturing facilities. To control SOx emissions from these sources, the following technologies are proposed as BARCT: wet gas scrubbers, dry gas scrubbers, hybrid dry gas scrubber (dry gas scrubber plus a baghouse), SOx reducing catalysts, fuel gas treatment, and selective oxidation catalyst treatment.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:			
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☑	☐	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☑	☐

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

I. a), & b) Implementation of the proposed project is expected to involve construction activities related to the modification of existing equipment at the top 12 SOx emitting RECLAIM facilities. The distribution of these SOx RECLAIM facilities is as follows: six are oil refineries, two are sulfuric acid manufacturing plants, one is a coke calciner plant, one is a cement manufacturing plant, and two are container glass manufacturing plants.

The physical changes involved with the type of SOx emission control strategies that are expected focus on the installation of new or the modification of existing control equipment at the following stationary sources of SOx: petroleum coke calciners, cement kilns, coal-fired boiler, container glass melting furnaces, diesel combustion of liquid fuels, FCCUs, refinery boilers and process heaters, sulfur recovery units/tail gas treatment units, and sulfuric acid manufacturing facilities. To control SOx emissions from these sources, the following technologies are proposed as BARCT: wet gas scrubbers, dry gas scrubbers, hybrid dry gas scrubber (dry gas scrubber plus a baghouse), SOx reducing catalysts, fuel gas treatment, and selective oxidation catalyst treatment.

Construction activities are expected as part of the proposed project. However, the construction activities are not expected to adversely impact views and aesthetics resources since most of the heavy equipment and activities are expected to occur within the confines of each existing facility and are expected to introduce only minor visual changes to areas outside each facility, if at all, depending on the location of the construction activities within the facility. Except for the use of cranes, the majority of the construction equipment is expected to be low in height and not

substantially visible to the surrounding area due to existing fencing along the property lines and existing structures currently within the facilities that would buffer the views of the construction activities. Further, the construction activities are expected to be temporary in nature and will cease following completion of the equipment installation or modifications.

Depending on the type of SOx emissions control employed, the proposed project could potentially introduce minor visual changes at some facilities. The affected units, depending upon their locations within each facility, could potentially be visible to areas outside of each facility. However, the affected units are expected to be about the same size profile as existing equipment present at each affected facility. The general appearance of the affected units is not expected to differ significantly from other equipment units such that no significant impacts to aesthetics are expected. Further, no scenic highways or corridors are located in the vicinities of the affected facilities such that the proposed project would not obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings.

I. c) All construction and operational activities associated with the proposed project are expected to take place within the boundaries of the existing RECLAIM facilities. The new equipment to be installed, or the existing equipment to be modified as part of the proposed project, will be similar in size, appearance, and profile to the existing equipment, with the exception of any installation of a wet gas scrubber

Except for the use of cranes, the majority of construction equipment that will be used to comply with the proposed project will be low in height and will not be visible to the surrounding areas due to the presence of existing fences and other structures that buffer views. During construction, cranes may be visible to the surrounding areas. Since the construction activities are temporary in nature, all construction equipment will be removed following completion of the proposed project.

Wet gas scrubber technology is potentially BARCT for six oil refineries (for six FCCUs and six sulfur recovery units/tail gas treatment units), two sulfuric acid manufacturing plants, one coke calciner plant, one cement manufacturing plant, and two container glass manufacturing plants. Upon completion of construction of all of these wet gas scrubbers, the operational activities of these units will emit flue gas that is saturated with water, forming a visible steam plume from a relatively high flue gas stack (approximately 200 feet above grade). Each stack and subsequent plume will have the potential to generate significant aesthetic impacts. Therefore, these potential impacts to aesthetics will be addressed in the Draft Environmental Assessment (EA) for the proposed project.

I. d) There are no components in the proposed project that would require construction activities to occur at night. Therefore, no additional lighting at the affected facilities would be required as a result of complying with the proposed project. However, if facility operators determine that the construction schedule requires nighttime activities, temporary lighting may be required. Nonetheless, since construction of the proposed project would be completely located within the boundaries of each affected facility, additional temporary lighting is not expected to be discernable from the existing permanent night lighting.

Additional permanent light sources may be installed on any installation of new equipment, to provide illumination for operations personnel at night, in accordance with applicable safety standards. Similarly, any existing equipment that would be modified as part of the proposed project are located in existing structures or areas that already have lighting systems in place for the same reasons. These additional light sources are not expected to create an impact because each component of the proposed project will be located within an existing industrial facility that operates up to 24 hours per day and the equipment is not restricted to operate during a specific time of day. The proposed project contains no provisions that would require affected equipment to operate differently during existing daytime or nighttime operations. Further, any new lighting that will be installed on the proposed equipment will be consistent in intensity and type with the existing lighting on equipment and other structures within each affected facility. While residential areas are located near some of the affected facilities, any additional lighting will be placed by and focused on the new equipment. For the aforementioned reasons, the proposed project is not expected to create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Therefore, less than significant impacts to light and glare are expected from the proposed project.

Based upon these considerations, significant adverse impacts to aesthetics are expected from the implementation of the proposed project and will be further analyzed in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
II.	**AGRICULTURE RESOURCES.** Would the project:			
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☑
c)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☑

Significance Criteria

Project-related impacts on agricultural resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.

- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

Discussion

II. a), b), & c) All construction and operational activities that would occur as a result of implementing the proposed project are expected to occur within the confines of the existing affected facilities. The proposed project would be consistent with the commercial, industrial and institutional zoning requirements for the various facilities and there are no agricultural resources or operations on or near the affected facilities. No agricultural resources including Williamson Act contracts are located within or would be impacted by construction activities at the affected facilities. Therefore, the proposed project would not result in any new construction of buildings or other structures that would convert farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Since the proposed project would not substantially change the facility or process for which the affected units are utilized, there are no provisions in the proposed project that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements relative to agricultural resources will be altered by the proposed project

Based upon these considerations, significant agricultural resource impacts are not expected from the implementation of the proposed project and will not be further analyzed in the Draft EA.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
III. AIR QUALITY. Would the project:			
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☑	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☑	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☑	☐	☐

	Potentially Significant Impact	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☑	☐
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑

Significance Criteria
To determine whether or not air quality impacts from the proposed project may be significant, impacts will be evaluated and compared to the criteria in Table 2-1. If impacts exceed any of the criteria in Table 2-1, they will be considered further in the Draft EA. As necessary, all feasible mitigation measures will be identified in the Draft EA and implemented to reduce significant impacts to the maximum extent feasible.

Discussion
Upon initial examination of the proposed project, the main focus of this analysis pertains to establishing BARCT for the following top 12 stationary sources in the SOx RECLAIM program: petroleum coke calciners, cement kilns, coal-fired boiler, container glass melting furnaces, diesel combustion of liquid fuels, FCCUs, refinery boilers and process heaters, sulfur recovery units/tail gas treatment units, and sulfuric acid manufacturing facilities. To control SOx emissions from these sources, the following technologies are proposed as BARCT: wet gas scrubbers, dry gas scrubbers, hybrid dry gas scrubber (dry gas scrubber plus a baghouse), SOx reducing catalysts, fuel gas treatment, and selective oxidation catalyst treatment. The physical changes involved with the type of SOx emission control strategies that are expected to occur focus on the installation of new or the modification of existing control equipment. The possibility of these types of SOx control technologies being used to comply with the proposed project and potential secondary adverse air quality impacts they may generate will be further evaluated in the Draft EA. The remaining portions of the proposed project are procedural in nature and will not result in an adverse air quality impact.

III. a) The SCAQMD is required by law to prepare a comprehensive district-wide AQMP which includes strategies (e.g., control measures) to reduce emission levels to achieve and maintain state and federal ambient air quality standards, and to ensure that new sources of emissions are planned and operated to be consistent with the SCAQMD's air quality goals. The AQMP's air pollution reduction strategies include control measures which target stationary, mobile and indirect sources. These control measures are based on feasible methods of attaining ambient air quality standards. Pursuant to the provisions of both the state and federal Clean Air Acts, the SCAQMD is required to attain the state and federal ambient air quality standards for all criteria pollutants, including PM10 and PM2.5. Although the District is currently classified as attainment for both state and federal SO2 ambient air quality standards, SOx is a precursor pollutant to PM10 and PM2.5. The proposed project implements AQMP Control Measure CM #2007CMB-02 which will bring the SOx RECLAIM program up-to-date with the latest BARCT

Table 2-1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	**Operation** [c]
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants [d]		
NO2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state) 0.053 ppm (federal)	
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 $\mu g/m^3$ (construction)[e] & 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$ 20 $\mu g/m^3$	
PM2.5 24-hour average	10.4 $\mu g/m^3$ (construction)[e] & 2.5 $\mu g/m^3$ (operation)	
Sulfate 24-hour average	1 $\mu g/m^3$	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day; ppm = parts per million; $\mu g/m^3$ = microgram per cubic meter; ≥ greater than or equal to

requirements to achieve, at a minimum, the proposed SOx emission reductions in CM #2007CMB-02 (at least 2.9 tons per day by compliance year 2014). Therefore, the proposed project will not obstruct or conflict with the implementation of the AQMP.

Although the proposed project has the potential to temporarily increase VOC, NOx, CO, PM10 and TAC emissions (as diesel PM) that could exceed the air quality significance thresholds for construction activities, the proposed project is not expected to interfere with achieving at least 2.9 tons per day of SOx emission reductions by the year 2014, which is consistent with the goals of the 2007 AQMP to achieve additional SOx emission reductions (and reduce SOx precursors as PM 2.5 and PM10) from stationary sources, which will assist in attaining state and federal PM2.5 and PM10 ambient air quality standards. Further, the temporary increase in VOC, NOx, CO, PM10 and TAC emissions (as diesel PM) due to construction is not expected to impede the emission reduction goals of the 2007 AQMP because the inventory prepared for the 2007 AQMP already takes into account the future emission estimates from all construction activities associated with implementing the proposed control measures[7]. Further, implementation of all other SCAQMD SOx rules along with AQMP control measures, when considered together, is expected to reduce SOx emissions throughout the region overall by 2020. Therefore, implementing the proposed project will not conflict or obstruct implementation of the AQMP.

III. b) The objective of the proposed project is to reduce SOx emissions from the following top 12 stationary sources in the SOx RECLAIM program: petroleum coke calciners, cement kilns, coal-fired boiler, container glass melting furnaces, diesel combustion of liquid fuels, FCCUs, refinery boilers and process heaters, sulfur recovery units/tail gas treatment units, and sulfuric acid manufacturing facilities. The proposed project is estimated to reduce emissions, at a minimum, of up to 2.9 tons per day of SOx by 2014 from these affected units. Compliance with the proposed project is expected to be achieved by the following SOx control technologies: wet gas scrubbers, dry gas scrubbers, hybrid dry gas scrubber (dry gas scrubber plus a baghouse), SOx reducing catalysts, fuel gas treatment, and selective oxidation catalyst treatment.

Implementation of the proposed project is expected to involve construction activities related to the installation or modification of the aforementioned SOx control technologies at 12 industrial facilities. The proposed project may also involve the construction of new buildings or other structures as part of installation or modification of the SOx controls. Construction-related activities are also expected to generate emissions from worker vehicles, trucks, and construction equipment. Due to the large scale of construction that would be expected from implementing the proposed project, project-specific construction emissions are potentially significant.

While the operational-related activities are expected to reduce emissions of SOx, a simultaneous increase in emissions of other criteria pollutants such as NOx and VOCs are expected from operations of stationary support equipment associated with the installed or modified SOx control equipment, as well as operational emissions associated with periodic truck deliveries of supplies needed to operate the SOx control equipment. Thus, the air quality impacts associated with the construction and operational phases of the proposed project are potentially significant and will be evaluated in the Draft EA.

[7] SCAQMD's Final Program Environmental Impact Report for the 2007 Air Quality Management Plan, SCH#2006111064, June 2007.

III. c) The anticipated SOx emission reductions that would result from implementing the proposed project are expected to improve the overall air quality in the Basin by enhancing the probability of attaining and maintaining state and federal ambient air quality standards for PM10 and PM2.5. However, the secondary construction and operation impacts associated with reducing SOx have the potential for creating significant adverse cumulative air quality impacts that will be evaluated in the Draft EA. In addition, operational activities associated with the proposed project also have the potential to increase emissions of greenhouse gases (GHGs); these potential increases will be evaluated in the Draft EA as part of the cumulative impacts discussion.

III. d) Emission sources associated with the construction-related activities as a result of implementing the proposed project may temporarily emit toxic air contaminants (TACs). Further, emissions sources associated with the operational-related activities as a result of implementing the proposed project may emit TACs. The impact of these emissions on sensitive populations, including individuals at hospitals, nursing facilities, daycare centers, schools, and elderly intensive care facilities, as well as residential and off-site occupational areas, will be evaluated in the Draft EA.

III. e) The proposed project is not expected to create significant adverse objectionable odors, either during construction or during operations. Sulfur compounds such as hydrogen sulfide, sulfur dioxide, sulfur trioxide, and sulfuric acid are the primary sources of odors from existing operations throughout the 12 affected SOx RECLAIM facilities. However, the objective of the proposed project is to implement BARCT which is expected to result in the installation of SOx controls and the reduction of sulfur-laden compounds that could otherwise generate odors. In other words, the proposed project is expected to reduce odor generation potential, a beneficial result of implementing the proposed project. Therefore, no significant odor impacts are expected from the proposed project.

III. f) The proposed project will be required to comply with all applicable SCAQMD, CARB, and EPA rules and regulations. Thus, the proposed project is not expected to diminish an existing air quality rule or future compliance requirements. Further, adopting and implementing the proposed project enhances existing air pollution control rules that are expected to assist the SCAQMD in its efforts to attain and maintain with a margin of safety the state and federal ambient air quality standards for PM10 and PM2.5.

Based upon these considerations, the air quality impacts associated with increased emissions of criteria air contaminants and GHGs during the construction phase and the increased emissions of GHGs during the operation phase of the proposed project will be evaluated further in the Draft EA.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:			
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑
c) Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑
e) Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☑
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☑

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

IV. a), b), c), & d) The proposed project would only affect units operating at 12 existing facilities located throughout the district. All of the affected units operating at existing facilities are located primarily in industrial areas, which have already been greatly disturbed. These areas currently do not support riparian habitat, federally protected wetlands, or migratory corridors. Additionally, special status plants, animals, or natural communities are not expected to be found within close proximity to the affected facilities. Therefore, the proposed project would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the SCAQMD's jurisdiction. The current and expected future land use development to accommodate population growth is primarily due to economic considerations or local government planning decisions. A conclusion in the Program Environmental Impact Report (EIR) for the 2007 AQMP was that population growth in the region would have greater adverse effects on plant species and wildlife dispersal or migration corridors in the basin than SCAQMD regulatory activities, (e.g., air quality control measures or regulations). The current and expected future land use development to accommodate population growth is primarily due to economic considerations or local government planning decisions.

IV. e) & f) The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by the proposed project. Additionally, the proposed project will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan, and would not create divisions in any existing communities because all activities associated with complying with the proposed project will occur at existing industrial facilities.

Based upon these considerations, significant biological resource impacts are not expected from the implementation of the proposed project and will not be further analyzed in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:			
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☑
d)	Disturb any human remains, including those interred outside a formal cemeteries?	☐	☐	☑

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

V. a) There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. Since construction-related activities associated with the implementation of the proposed project are expected to be confined within the existing footprint of the 12 affected facilities, no impacts to historical resources are expected to occur as a result of implementing the proposed project.

V. b), c), & d) Installing or modifying add-on controls and other associated equipment to comply with the proposed project will require disturbance of previously disturbed areas at 12 existing industrial facilities. However, since construction-related activities are expected to be confined within the existing footprint of these affected facilities, the proposed project is not expected to require physical changes to the environment, which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that these areas are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed. Therefore, the proposed project has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside a formal cemeteries. The proposed project is, therefore, not anticipated to result in any activities or promote any programs that could have a significant adverse impact on cultural resources in the district.

Based upon these considerations, significant cultural resources impacts are not expected from the implementation of the proposed project and will not be further analyzed in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
VI.	**ENERGY.** Would the project:			
a)	Conflict with adopted energy conservation plans?	☐	☐	☑
b)	Result in the need for new or substantially altered power or natural gas utility systems?	☑	☐	☐
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☑	☐	☐

		Potentially Significant Impact	Less Than Significant Impact	No Impact
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☑	☐	☐
e)	Comply with existing energy standards?	☐	☐	☑

Significance Criteria

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

The proposed project would reduce emissions of SOx from various stationary sources at 12 affected facilities. The expected options for compliance are either installing or modifying air pollution control equipment appropriate to the type of process unit. Further, it is expected that the installation and operation of any equipment used to comply with the proposed project will also comply with all applicable existing energy standards.

VI. a) & e) The proposed project is not subject to any existing energy conservation plans. If a facility that is subject to Regulation XX and the proposed project is also subject to energy conservation plans, it is not expected that the proposed project will affect in any way or interfere with that facility's ability to comply with its energy conservation plan or energy standards. Further, project construction and operation activities will not utilize non-renewable energy resources in a wasteful or inefficient manner.

VI. b), c) & d. Installation or modification of air pollution control equipment to comply with the proposed project is expected to increase demand for energy used for operating the primary equipment as well as support equipment such as pumps, fans, controllers, et cetera.

Any additional electricity required is typically either supplied by each affected facility's cogeneration units, for those that have them, or by the local electrical utility, as appropriate. It is possible that some facilities may need new or substantially altered power utility systems to be built to accommodate any additional electricity demands created by the proposed project. In some cases, an increase in natural gas use is also expected for operations subject to the proposed project.

Based upon these considerations, significant adverse impacts to energy are expected from implementation of the proposed project and will be evaluated further in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
VII.	**GEOLOGY AND SOILS.** Would the project:			
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:			
	• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☑
	• Seismic–related ground failure, including liquefaction?	☐	☐	☑
	• Landslides?	☐	☐	☑
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑
c)	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☑
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☑

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.

- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

VII. a) Since the proposed project would result in construction activities at 12 industrial settings to install or modify SOx control equipment, little site preparation is anticipated that could adversely affect geophysical conditions in the jurisdiction of the SCAQMD. Southern California is an area of known seismic activity. Accordingly, the installation of add-on controls at existing affected facilities to comply with the proposed project is expected to conform to the Uniform Building Code and all other applicable state and local building codes. As part of the issuance of building permits, local jurisdictions are responsible for assuring that the Uniform Building Code is adhered to and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation condition at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction. Thus, the proposed project would not alter the exposure of people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground shaking, ground failure or landslides is not anticipated and will not be further analyzed in the Draft EA.

VII. b) Since add-on controls will likely be installed at existing facilities, during construction of the proposed project, a slight possibility exists for temporary erosion resulting from excavating and grading activities, if required. These activities are expected to be minor since the existing facilities are generally flat and have previously been graded. Further, wind erosion is not expected to occur to any appreciable extent, because operators at dust generating sites would be required to comply with the best available control measure (BACM) requirements of SCAQMD Rule 403 – Fugitive Dust. In general, operators must control fugitive dust through a number of soil stabilizing measures such as watering the site, using chemical soil stabilizers, revegetating inactive sites, etc. The proposed project involves the installation or modification of add-on control equipment at 12 existing facilities, so that grading could be required to provide stable foundations. Potential air quality impacts related to grading are addressed elsewhere in this Initial Study (as part of construction air quality impacts). No unstable earth conditions or changes in geologic substructures are expected to result from implementing the proposed project.

VII. c) Since the proposed project will affect existing facilities, it is expected that the soil types present at the affected facilities will not be further susceptible to expansion or liquefaction. Furthermore, subsidence is not anticipated to be a problem since only minor excavation, grading, or filling activities are expected occur at affected facilities. Additionally, the affected areas are not envisioned to be prone to new landslide impacts or have unique geologic features since the affected equipment units are located at existing facilities in industrial areas.

VII. d) & e) Since the proposed project will affect equipment units at existing facilities located in industrial zones, it is expected that people or property will not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal. Further, typically each affected facility has some degree of existing wastewater treatment systems that will continue to

be used and are expected to be unaffected by the proposed project. Sewer systems are available to handle wastewater produced and treated by each affected facility. Each existing facility affected by the proposed project does not require installation of septic tanks or alternative wastewater disposal systems. As a result, the proposed project will not require facility operators to utilize septic systems or alternative wastewater disposal systems. Thus, implementation of the proposed project will not adversely affect soils associated with a septic system or alternative wastewater disposal system.

Based upon these considerations, significant geology and soils impacts are not expected from the implementation of the proposed project and will not be further analyzed in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:			
a)	Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	☑	☐	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	☑	☐	☐
c)	Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☑	☐	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☑	☐	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☑	☐
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☑	☐
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑

		Potentially Significant Impact	Less Than Significant Impact	No Impact
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☑
i)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

VIII. a) & b) New or modified air pollution control equipment and related components are expected to be installed at most of the 12 affected facilities such that their operations may increase the quantity of hazardous materials (e.g., catalysts, scrubbing agents) used by the control equipment. In addition, the shipping, handling, storing, and disposing of hazardous materials inherently poses a certain risk of a release to the environment. Thus, the routine transport of hazardous materials, use, and disposal of hazardous materials may increase as a result of implementing the proposed project. Further, if the control option chosen by each affected facility operator is a wet gas scrubber, the proposed project may alter the transportation modes for catalyst and scrubbing agent feedstock and any other associated chemicals to/from the existing facilities.

For these reasons, implementation of the proposed project may alter the hazards associated with the existing affected facilities. At many of the affected facilities, a number of hazardous materials are currently in use. In general, the major types of public safety risks that need to be evaluated consist of impacts resulting from toxic substance releases, fires, and explosions.

Therefore, potential hazards impacts as a result of implementing the proposed project are potentially significant and will be addressed in the Draft EA.

VIII. c) Some affected facilities may be located within one-quarter mile of a sensitive receptor (e.g., a day care center). Therefore, a potential for significant impacts from hazardous emissions or the handling of acutely hazardous materials, substances and wastes near sensitive-receptors may occur and will be addressed in the Draft EA.

VIII. d) Government Code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). Construction activities associated with implementing the proposed project will occur within the confines of the existing affected facilities. Some of the affected facilities may be included on the list of the hazardous materials sites compiled pursuant to Government Code §65962.5. Hazardous wastes from these existing facilities are managed in accordance with applicable federal, state, and local rules and regulations. The types of additional waste expected to be generated from implementing the proposed project will consist primarily of additional catalyst used by the new SOx control devices. For those affected facilities which already use catalyst for other operational activities on-site, the additional collected spent catalyst will continue to be handled in the same manner as currently handled such that it will be disposed and/or recycled at approved facilities. Further, if any of other affected facilities are new to handling catalyst waste, the same disposal/recycling procedures are expected to be followed. Accordingly, significant hazards impacts from the disposal and/or recycling of hazardous materials are not expected and will not be further analyzed in the Draft EA.

Construction activities at the affected facilities that may occur as part of implementation of the proposed project may require grading, excavating, and trenching which could potentially uncover contaminated soils. In the event that any excavated soils contain concentrations of certain substances, including heavy metals and hydrocarbons, the handling, processing, transportation and disposal of the contaminated soils will be subject to multiple hazardous waste regulations such as Title 22 of the California Code of Regulations and other local and federal rules. Title 22 has multiple requirements for hazardous waste handling, transport and disposal, such as requirements to used approved disposal and treatment facilities, to use certified hazardous waste transporters, and to have manifests for tracking the hazardous materials. If contaminated soils are encountered during grading, excavating, and trenching, the soils would need to be removed for proper decontamination and disposal in accordance with SCAQMD Rule 1166 – Volatile Organic Compound Emissions From Decontamination of Soil. Therefore, impacts related to soil contamination will be addressed in the Draft EA.

VIII. e) & f) Construction activities from implementing the proposed project are expected to occur within the existing confines of the affected facilities. However, some of these facilities may be located within two miles of an airport (either public or private) and are located within an airport land use plan. Nonetheless, the installation of the SOx control devices is expected to be constructed according to the all appropriate building, land use and fire codes and operated at a low enough height relative to existing flight patterns so that the structure would not interfere with plane flight paths consistent with Federal Aviation Regulation, Part 77. Such codes are designed to protect the public from hazards associated with normal operation. Therefore, the proposed project is not expected to result in a safety hazard for people residing or working in the area of the affected facilities even within the vicinity of an airport and as such, will not be further analyzed in the Draft EA.

VIII. g) Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but the facility employees as well. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. The existing industrial facilities affected by the proposed project would typically already have their own emergency response plans in place. However, for those

operators of affected facilities who elect to install SOx control technology may need to update their emergency response plan. Thus, the proposed project is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and as such, will not be further analyzed in the Draft EA.

VIII. h) & i) The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations. Further, businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against potential risk of upset.

The proposed project is not expected to increase the existing risk of fire hazards in areas with flammable brush, grass, or trees. Additional natural gas may be used during both construction and operation of the proposed project. Natural gas is currently used at all of the affected facilities. The hazards associated with natural gas would result in a torch fire in the event that a release occurred and caught fire. Because of the locations of each facility that would be affected by the proposed project, a torch fire would be expected to remain on-site so that there would be no public exposure to the fire hazards. No substantial or native vegetation typically exists on or near the affected facilities (specifically because they could be a fire hazard) so the proposed project is not expected to expose people or structures to wild fires. Therefore, no significant increase in fire hazards are expected any of the affected facilities associated with implementing the proposed project.

Based on these considerations, the potential hazards impacts related to the construction and operations at each affected facility and the transport of hazardous materials associated with the proposed project will be addressed in the Draft EA.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
IX. HYDROLOGY AND WATER QUALITY. Would the project:			
a) Violate any water quality standards or waste discharge requirements?	☑	☐	☐

		Potentially Significant Impact	Less Than Significant Impact	No Impact
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☑	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☑	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☑	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☑	☐
f)	Otherwise substantially degrade water quality?	☑	☐	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☑
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flaws?	☐	☐	☑
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☑
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
k) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☑	☐	☐
l) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☑	☐	☐
m) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☑	☐
n) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☑	☐	☐
o) Require in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☑	☐	☐

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
- The project increases demand for water by more than five million gallons per day.

Discussion

IX. a), f), k), l) & o) Operators of facilities affected by the proposed project are expected to install new air pollution control equipment, such as wet gas scrubbers, to reduce SOx emissions. Operational activities associated with wet gas scrubbers will increase the demand for water and subsequently, will increase the amount wastewater discharged at each affected facility. In addition, construction activities associated with the proposed project may require the use of water as a dust suppressant, if grading is required. The impacts of the proposed project on each affected facility's wastewater discharge and the Industrial Wastewater Discharge Permit are expected to be potentially significant. Thus, the potential impact of the increase in water demand and wastewater discharge will be evaluated in the Draft EA.

IX. b) Implementation of the proposed project is not expected to significantly adversely affect the quantity or quality of groundwater in the area of each affected facility. No significant adverse impacts are expected to ground water quality from the proposed project because: 1) wastewater will continue to be collected and treated in each of the affected facility's wastewater treatment systems or in compliance with the current wastewater discharge permits, as applicable; 2) no underground storage tanks are expected to be constructed as part of the proposed project; 3) containment berms will be required or may already exist around any new or modified units to minimize the potential for a spill to contaminate soil and groundwater; and, 4) any new storage tanks that may be proposed will be required to comply with BACT and other safety requirements such as double bottom and monitoring requirements.

IX. c), d), e) & m) Changes to each affected facility's storm water collection systems are expected to be less than significant since most of the changes associated with the proposed project will occur within existing units (i.e., by installing SOx control equipment). Further, typically most of the areas likely to be affected by the proposed project are currently paved and are expected to remain paved. Any new units constructed will be curbed and the existing units will remain curbed to contain any runoff. Any runoff occurring will continue to be handled by each affected facility's wastewater system and sent to an on-site wastewater treatment system prior to discharge. The surface water runoff is expected to be handled with each facility's current wastewater treatment system. Storm water runoff will be collected and discharged in accordance with each facility's discharge permit terms and conditions. Storm water Pollution Prevention Plans may need to be updated, as necessary to reflect operational modifications and included additional Best Management Practices, if required. Therefore, less than significant storm water quality impacts are expected to result from the operation of the proposed project.

IX. g), h), & i) The proposed project is expected to involve construction and modification activities located within the confines of existing facilities and does not include the construction of any new housing so it would not place new housing within a 100-year flood hazard area. It is likely that most affected facilities are not located within a 100-year flood hazard area. Any affected facilities that may be located in a 100-year flood area could impede or redirect 100-year flood flows, but this would be considered part of the existing setting and not an effect of the proposed project. Since the proposed project would not require locating new facilities within a flood zone, it is not expected that implementation of the proposed project would expose people or property to any known water-related flood hazards.

IX. j) The proposed project does not require construction of new facilities in areas that could be affected by tsunamis. Of the facilities affected by the proposed project, some are located near the Ports of Long Beach, Los Angeles, and San Pedro. The port areas are protected from tsunamis by the construction of breakwaters. Construction of breakwaters combined with the distance of each facility from the water is expected to minimize the potential impacts of a tsunami or seiche so that no significant impacts are expected. The proposed project does not require construction of facilities in areas that are susceptible to mudflows (e.g., hillside or slope areas). Existing affected facilities that are currently located on hillsides or slope areas may be susceptible to mudflow, but this would be considered part of the existing setting. As a result, the proposed project is not expected to generate significant adverse mudflow impacts.

IX. n) Each affected facility may not have sufficient water supplies available for implementing the proposed project since the type of air pollution control equipment that would be installed at the affected facilities (e.g., wet gas scrubbers) heavily rely on water as part of the control process. Also, limited water demand increases may occur for dust suppression during site preparation/grading activities. Thus, the need for new or expanded water supply entitlements may be necessary. While it is not possible to predict water availability in the future, existing entitlements and resources in the district are currently at drought levels. Thus, the water demand that would result from implementing the proposed project may result in significant adverse water impacts.

Based upon these considerations, the potential hydrology and water quality impacts, especially those associated with wastewater discharge and water demand are expected to be significant and will be evaluated in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
X.	**LAND USE AND PLANNING.** Would the project:			
a)	Physically divide an established community?	☐	☐	☑
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☑
c)	Conflict with any applicable habitat conservation or natural community conservation plan?	☐	☐	☑

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

X. a) The proposed project does not require the construction of new facilities, but any physical effects that will result from the proposed project, will occur at existing industrial facilities. Thus, implementing the proposed project will not result in physically dividing any established communities.

X. b) & c) There are no provisions in the proposed project that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by the proposed project. Further, the proposed project would be consistent with the typical industrial zoning of the affected facilities. Typically, all proposed construction activities are expected to occur within the confines of the existing facilities. The proposed project would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Further, no new development or alterations to existing land designations will occur as a result of the implementation of the proposed project. Therefore, present or planned land uses in the region will not be affected as a result of implementing the proposed project.

Based upon these considerations, significant land use planning impacts are not expected from the implementation of the proposed project, and thus, will not be further analyzed in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** Would the project:			
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☑
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☑

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

XI. a) & b) There are no provisions in the proposed project that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such

as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Based upon these considerations, significant mineral resource impacts are not expected from the implementation of the proposed project, and thus, will not be further analyzed in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
XII.	**NOISE.** Would the project result in:			
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☑	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☑	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☑	☐
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☑	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☑	☐
f)	For a project within the vicinity of a private airship, would the project expose people residing or working in the project area to excessive noise levels?	☐	☑	☐

Significance Criteria

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.

- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

XII. a), b), c), & d) Modifications or changes associated with the implementation of the proposed project will take place at existing facilities that are located in industrial settings. The existing noise environment at each of the affected facilities is typically dominated by noise from existing equipment onsite, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Construction activities associated with implementing the proposed project may generate some noise associated with the use of construction equipment and construction-related traffic. However, noise from the proposed project is not expected to produce noise in excess of current operations at each of the existing facilities. If SOx control devices are installed, the operations phase of the proposed project may add new sources of noise to each affected facility. However, it is expected that each facility affected will comply with all existing noise control laws or ordinances. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA (Cal/OSHA) have established noise standards to protect worker health. These potential noise increases are expected within the allowable noise levels established by the local noise ordinances for industrial areas, and thus are expected to be less than significant. Therefore, potential noise impacts will not be further evaluated in the Draft EA.

XII. e) & f) Though some of the facilities affected by the proposed project are located at sites within an airport land use plan, or within two miles of a public airport, the addition of SOx control equipment would not expose people residing or working in the project area to the same degree of excessive noise levels associated with airplanes. All noise producing equipment must comply with local noise ordinances and applicable OSHA or Cal/OSHA workplace noise reduction requirements.

Based upon these considerations, significant noise impacts are not expected from the implementation of the proposed project and will not be further analyzed in the Draft EA.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:			
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☑

		Potentially Significant Impact	Less Than Significant Impact	No Impact
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☑

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

XIII. a) The construction activities associated with the proposed project at each affected facility are not expected to involve the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. The reason for this conclusion is that operators of affected facilities who need to perform any construction activities to comply with the proposed project can draw from the existing labor pool in the local southern California area. Further, it is not expected that the installation of the SOx control equipment will require new employees during operation of the equipment. In the event that new employees are hired, it is expected that the number of new employees at any one facility would be small. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing the proposed project. As a result, the proposed project is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the district or population distribution.

XIII. b) & c) Because the proposed project includes modifications and/or changes at existing facilities located in industrial settings, the proposed project is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people or housing elsewhere in the district.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed project and will not be further evaluated in the Draft EA.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:			
a) Fire protection?	☐	☐	☑
b) Police protection?	☐	☐	☑
c) Schools?	☐	☐	☑
d) Parks?	☐	☐	☑
e) Other public facilities?	☐	☐	☑

Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion

XIV. a) & b) Implementation of the proposed project is expected to cause facility operators to install SOx control devices, all the while continuing current operations at existing affected facilities. The proposed project may result in a greater demand for catalyst and scrubbing agents, which will need to be transported to the affected facilities that install SOx controls and stored onsite prior to use. In the event of an accidental release, fire departments are typically first responders for control and clean-up and police may be need to be available to maintain perimeter boundaries. Based on the low probability of accidental releases of catalysts and scrubbing agents occurring, the proposed project is not expected to increase the need or demand for additional public services (e.g., fire departments, police departments, schools, parks, government, et cetera) above current levels.

XIV. c) & d) As noted in the previous "Population and Housing" discussion, the proposed project is not expected to induce population growth in any way because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate any construction activities that may be necessary at affected facilities and operation of new SOx control equipment is not expected to require additional employees. Therefore, there will be no increase in local population and thus no impacts are expected to local schools or parks.

XIV. e) The proposed project is expected to result in the use of new or modified add-on control equipment for SOx control. Besides permitting the equipment or altering permit conditions by the SCAQMD, there is no need for other types of government services. The proposed project would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population and, therefore, no need for physically altered government facilities.

Based upon these considerations, significant public services impacts are not expected from the implementation of the proposed project and will not be further evaluated in the Draft EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
XV.	**RECREATION.**			
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☑

Significance Criteria

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion

XV. a) & b) As discussed previously under "Land Use," there are no provisions in the proposed project that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments; no land use or planning requirements will be altered by the proposed project. Further, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities or include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment because the proposed project is not expected to induce population growth.

Based upon these considerations, significant public services impacts are not expected from the implementation of the proposed project and will not be further evaluated in the Draft EA.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVI. SOLID/HAZARDOUS WASTE. Would the project:			
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☑	☐
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☑	☐

Significance Criteria

The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

XVI. a) Construction activities associated with installing SOx control equipment such as wet gas scrubbers, demolition and site preparation/grading/excavating could generate solid waste as result of implementing the proposed project. Demolition activities could generate demolition waste while site preparation, grading, and excavating could uncover contaminated soils since the facilities affected by the proposed project are located in existing industrial areas. Excavated soil, which may be contaminated, will need to be characterized, treated, and disposed of offsite in accordance with applicable regulations. Where appropriate, the soil will be recycled if it is considered or classified as non-hazardous waste or it can be disposed of at a landfill that accepts non-hazardous waste. Otherwise, the material will need to be disposed of at a hazardous waste facility. (Potential soil contamination is addressed in the Hazards/Hazardous Materials discussion in Section VIII. d.)

Solid or hazardous wastes generated from construction-related activities would consist primarily of materials from the demolition of existing air pollution control equipment and construction associated with new air pollution control equipment. Construction-related waste would be disposed of at a Class II (industrial) or Class III (municipal) landfill. There are 48 Class II/Class III landfills within the SCAQMD's jurisdiction. The estimated total capacity of these landfills is approximately 111,198 tons per day (SCAQMD, 2000). For these reasons, the construction impacts of the proposed project on waste treatment/disposal facilities are expected to be less than significant.

During operation of the SOx control equipment, the use of catalyst is expected to increase but the generation of catalyst fines is expected to be captured by the control equipment as wet solids. These wet catalyst solids can be collected for recycling for use in manufacturing cement. Therefore, less than significant adverse impacts to non-hazardous waste disposal facilities are expected from operational activities associated with the proposed project.

It is possible that some, if not all, of the affected facilities will address any increase in waste through their existing waste minimization plans. In addition, other affected facilities that have

existing catalyst-based operations currently regenerate, reclaim or recycle the catalysts, in lieu of disposal. Moreover, due to the heavy metal content and its relatively high cost, catalyst recycling can be a lucrative choice. Depending on operating conditions, it is expected that spent catalysts would be reclaimed and recycled, though it is possible that spent catalysts could be disposed of. The composition of the catalyst will determine in which type of landfill a catalyst would be disposed.

Based on the preceding discussion, it is likely that spent catalysts would be considered a "designated waste," which is characterized as a non-hazardous waste consisting of, or containing pollutants that, under ambient environmental conditions, could be released at concentrations in excess of applicable water objectives, or which could cause degradation of the waters of the state (California Code of Regulations, Title 23, Chapter 3 Subparagraph 2522(a)(1)). Depending on its actual waste designation, spent catalysts would likely be disposed of in a Class II landfill or a Class III landfill that is fitted with liners. According to the Program EIR for the 2007 AQMP (SCAQMD, 2007), total Class III landfill waste disposal capacity in the district is approximately 97,269 tons per day, many of which have liners and can handle Class II and Class III wastes.

Disposal of spent catalyst would typically involve crushing the material and encasing it in concrete prior to disposal. Since it is expected that most spent catalysts will be recycled and regenerated, it is anticipated that there will be sufficient landfill capacity in the district to accommodate disposal of any spent catalyst materials. Thus, the potential increase of solid waste generated by the air pollution control equipment operated at the 12 affected facilities that are expected to install SOx control equipment as a result implementing the proposed project may not necessarily be disposed of and, therefore, is not expected to exceed the capacity of designated landfills available to each affected facility.

XVI. b) Implementing the proposed project is not expected to hinder in any way any affected facility's ability to comply with existing federal, state, and local regulations related to solid and hazardous wastes.

Based upon these considerations, significant solid/hazardous waste impacts are not expected from the implementation of the proposed project and will not be further evaluated in the Draft EA.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
XVII. TRANSPORTATION/TRAFFIC. Would the project:			
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☑	☐	☐

		Potentially Significant Impact	Less Than Significant Impact	No Impact
b)	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☑	☐	☐
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☑	☐
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☑
e)	Result in inadequate emergency access?	☐	☑	☐
f)	Result in inadequate parking capacity?	☐	☑	☐
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☑	☐

Significance Criteria

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

Discussion

XVII. a) & b) Construction activities resulting from implementing the proposed project may generate a temporary increase in traffic in the areas of each affected facility associated with construction workers, construction equipment, and the delivery of construction materials. Also, the proposed project may exceed, either individually or cumulatively, the current level of service of the areas surrounding the affected facilities. The impacts of the traffic load and capacity of the street system during construction will be analyzed in the Draft EA.

The work force at each affected facility is not expected to significantly increase during operations of the proposed project operations because few, if any, new employees are expected to be needed to operate potential SOx control equipment. As a result, operation-related traffic is expected to be limited more towards supply deliveries, but less than significant. Thus, the operational traffic impacts will not be evaluated further in the Draft EA.

XVII. c) Though some of the facilities that will be affected by the proposed project are located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, actions that would be taken to comply with the proposed project, such as installing SOx control equipment, are not expected to significantly influence or affect air traffic patterns. Further, the size and type of air pollution control devices that would be installed would not be expected to affect navigable air space. Thus, the proposed project would not result in a change in air traffic patterns including an increase in traffic levels or a change in location that results in substantial safety risks.

XVII. d) & e) The siting of each affected facility is consistent with surrounding land uses and traffic/circulation in the surrounding areas of the affected facilities. Thus, the proposed project is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the affected facilities. Aside from the temporary effects due to a slight increase in truck traffic for those facilities that will undergo construction activities during installation of air pollution control equipment, the proposed project is not expected to alter the existing long-term circulation patterns. Further, the proposed project is not expected to require a modification to circulation, thus, no long-term impacts on the traffic circulation system are expected to occur. The proposed project is not expected to involve the construction of any roadways, so there would be no increase in roadway design feature that could increase traffic hazards. Emergency access at each affected facility is not expected to be impacted by the proposed project. Further, each affected facility is expected to continue to maintain their existing emergency access gates.

XVII. f) Each affected facility will be required to provide parking for the construction workers, as applicable, either on or within close proximity to each facility. No additional parking will be needed after completion of the construction phase because the work force at each facility is not expected to significantly increase as a result of implementing the proposed project.

XVII. g) Construction and operation activities resulting from implementing the proposed project are not expected to conflict with policies supporting alternative transportation since the proposed project does not involve or affect alternative transportation modes (e.g. bicycles or buses) because the construction and operation activities related to the proposed project will occur solely in existing industrial areas.

Based upon these considerations, significant transportation/traffic impacts are not expected from the implementation of the proposed project and will not be further evaluated in the Draft EA.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.			
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☑
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☑	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☑	☐	☐

Discussion

XVIII. a) The proposed project is not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past. As indicated in the biological resources discussion, each site affected by the proposed project is part of an existing facility, which has been previously graded, such that the proposed project is not expected to extend into environmentally sensitive areas.

XVIII. b) The Environmental Checklist indicates that the proposed project has potentially significant adverse impacts on aesthetics, air quality, energy, hydrology and water quality, hazards and hazardous materials, and transportation/traffic. The potential for cumulative impacts on these resources will be evaluated in the Draft EA.

XVIII. c) Even though the objective of the proposed project is to reduce SOx emissions from the top emitters in the RECLAIM program, the proposed project may result in secondary effects, emissions of regulated air pollutants, toxic air contaminants, GHGs and may also increase the hazards at some of the affected facilities. The potential for these impacts to have adverse impacts on human beings, either directly or indirectly, will be evaluated in the Draft EA.

A P P E N D I X A

P R O P O S E D A M E N D E D R E G U L A T I O N X X:

Proposed Amended Rule 2002

(Adopted October 15, 1993)(Amended March 10, 1995)(Amended December 7, 1995)
(Amended July 12, 1996)(Amended February 14, 1997)
(Amended May 11, 2001)(Amended January 7, 2005)
(Draft June 9, 2009)

PROPOSED AMENDED RULE 2002. ALLOCATIONS FOR OXIDES OF NITROGEN (NO_X) AND OXIDES OF SULFUR (SO_X)

(a) Purpose

The purpose of this rule is to establish the methodology for calculating facility Allocations and adjustments to RTC holdings for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx).

(b) RECLAIM Allocations

(1) RECLAIM Allocations will begin in 1994.

(2) An annual Allocation will be assigned to each facility for each compliance year starting from 1994.

(3) NOx Allocations and NOx RTC holdings for each year after 2011 are equal to the 2011 Allocation and RTC holdings, and SOx Allocations and SOx RTC holdings for each year after 20XX we equal to the 20XX Allocation and holdings as determined pursuant to subdivision (f) unless, as part of the AQMP process, and pursuant to Rule 2015 (b)(1), (b)(3), (b)(4), or (c), the District Governing Board determines that additional reductions are necessary to meet air quality standards, taking into consideration the current and projected state of technology available and cost-effectiveness to achieve further emission reductions.

(4) The Facility Permit or relevant sections thereof shall be re-issued at the beginning of each compliance year to include allocations determined pursuant to subdivisions (c), (d), (e), and (f) and any RECLAIM Trading Credits (RTC) obtained pursuant to Rule 2007 - Trading Requirements for the next fifteen years thereafter and any other modifications approved or required by the Executive Officer.

(c) Establishment of Starting Allocations

(1) The starting Allocation for RECLAIM NO_X and SO_X facilities initially permitted by the District prior to October 15, 1993, shall be determined by the Executive Officer utilizing the following methodology:

Starting Allocation=$\Sigma[A \times B_1]$+ERCs+External Offsets

w~~W~~here

A = the throughput for each NO_X and SO_X source or process unit in the facility for the maximum throughput year from 1989 to 1992 inclusive; and

B_1 = the applicable starting emission factor for the subject source or process unit as specified in Table 1 or Table 2

(2) (A) Use of 1992 data is subject to verification and revision by the Executive Officer or designee to assure validity and accuracy.

(B) The maximum throughput year will be determined by the Executive Officer or designee from throughput data reported through annual emissions reports submitted pursuant to Rule 301 - Permit Fees, or may be designated by the permit holder prior to issuance of the Facility Permit.

(C) To determine the applicable starting emission factor in Table 1 or Table 2, the Executive Officer or designee will categorize the equipment at each facility based on information relative to hours of operation, equipment size, heating capacity, and permit information submitted pursuant to Rule 201 - Permit to Construct, and other relevant parameters as determined by the Executive Officer or designee. No information used for purposes of this subparagraph may be inconsistent with any information or statement previously submitted on behalf of the facility to the District, including but not limited to information and statements previously submitted pursuant to Rule 301 - Permit Fees, unless the facility can demonstrate, by clear and convincing documentation, that such information or statement was inaccurate.

(D) Throughput associated with each piece of equipment or NO_X or SO_X source will be multiplied by the starting emission factors specified in Table 1 or Table 2. If a lower emission factor was utilized for a given piece of equipment or NO_X or SO_X source pursuant to Rule 301 - Permit Fees, than the factor in Table 1 or Table 2, the lower factor will be used for determining that portion of the Allocation.

(E) Fuel heating values may be used to convert throughput records into the appropriate units for determining Allocations based on the emission factors in Table 1 or Table 2. If a different unit basis than set forth in Tables 1 and 2 is needed for emissions calculations, the Executive Officer shall use a default heating value to determine source emissions, unless the Facility Permit holder can demonstrate with substantial evidence to the Executive Officer that a different value should be used to determine emissions from that source.

(3) All NO_X and SO_X ERCs generated at the facility and held by a RECLAIM Facility Permit holder shall be reissued as RTCs. RECLAIM facilities will have these RTCs added to their starting Allocations. RTCs generated from the conversion of ERCs shall have a zero rate of reduction for the year 1994 through the year 2000. Such RTCs shall have a cumulative rate of reduction for the years 2001, 2002, and 2003, equal to the percentage inventory adjustment factor applied to 2003 Allocations pursuant to paragraph (e)(1) of this rule and shall have a rate of reduction for compliance year 2004 and subsequent years determined pursuant to paragraph (f)(1) or (f)(2) of this rule.

(4) Non-RECLAIM facilities may elect to have their ERCs converted to RTCs and listed on the RTC Listing maintained by the Executive Officer or designee pursuant to Rule 2007 - Trading Requirements, so long as the written request is filed before July 1, 1994. Such RTCs will be assigned to the trading zone in which the generating facility is located. RTCs generated from the conversion of ERCs shall have a zero rate of reduction for the year 1994 through the year 2000. Such RTCs shall have a cumulative rate of reduction for the years, 2001, 2002, and 2003, equal to the percentage inventory adjustment factor applied to 2003 Allocations pursuant to paragraph (e)(1) of this rule.

(5) External offsets provided pursuant to Regulation XIII - New Source Review, not including any offsets in excess of a 1 to 1 ratio, will be added to the starting Allocation pursuant to paragraph (c)(1) provided:

(A) The offsets were not received from either the Community Bank or the Priority Reserve.

(B) External offsets will only be added to the starting Allocation to

the extent that the Facility Permit holder demonstrates that they have not already been included in the starting Allocation or as an ERC. RTCs issued for external offsets shall not include any offsets in excess of a 1 to 1 ratio required under Regulation XIII - New Source Review.

(C) RTCs generated from the conversion of external offsets shall have a zero rate of reduction for the year 1994 through the year 2000. These RTCs shall have a cumulative rate of reduction for the years 2001, 2002, and 2003, equal to the percentage inventory adjustment factor applied to 2003 Allocations pursuant to paragraph (e)(1) of this rule, and for compliance year 2004 and subsequent years allocations shall be determined pursuant to paragraph (f)(1) or (f)(2) of this rule. The rate of reduction for the year 2001 through year 2003 shall not be applied to new facilities initially totally permitted on or after January 7, 2005.

(D) Existing facilities with units that have Permits to Construct issued pursuant to Regulation II - Permits, dated on or after January 1, 1992, or existing facilities which have, between January 1, 1992 and October 15, 1993, installed air pollution control equipment that was exempt from offset requirements pursuant to Rule 1304 (a)(5), shall have their starting Allocations increased by the total external offsets provided, or the amount that would have been offset if the exemption had not applied.

(E) Existing facilities with units whose reported emissions are below capacity due to phased construction, and/or where the Permit to Operate issued pursuant to Regulation II - Permits, was issued after January 1, 1992, shall have their starting Allocations increased by the total external offsets provided.

(6) If a Facility Permit holder can demonstrate that its 1994 Allocation is less than the 1992 emissions reported pursuant to Rule 301 - Permit Fees, and that the facility was, in 1992, operating in compliance with all applicable District rules in effect as of December 31, 1993, the facility's starting Allocation will be equal to the 1992 reported emissions.

(7) For new facilities initially totally permitted on or after January 1, 1993 but prior to October 15, 1993, the starting Allocation shall be equal to the external offsets provided by the facility to offset emission increases at the

facility pursuant to Regulation XIII - New Source Review, not including any offsets in excess of a 1 to 1 ratio.

(8) The Allocation for new facilities initially totally permitted on and after October 15, 1993, shall be equal to the total RTCs provided by the facility to offset emission increases at the facility pursuant to Rule 2005-New Source Review for RECLAIM.

(9) The starting Allocation for existing facilities which enter the RECLAIM program pursuant to Rule 2001 - Applicability, shall be determined by the methodology in paragraph (c)(1) of this rule. The most recent two years reported emission fee data filed pursuant to Rule 301 - Permit Fees, may be used if 1989 through 1992 emission fee data is not available. For facilities lacking reported emission fee data, the Allocation shall be equal to the external offsets provided pursuant to Regulation XIII - New Source Review, not including any offsets in excess of a 1 to 1 ratio. The Allocation shall not include any emission offsets received from either the Community Bank or the Priority Reserve.

(10) A facility may not receive more than one set of Allocations.

(11) A facility that is no longer holding a valid District permit on January 1, 1994 will not receive an Allocation, but may, if authorized by Regulation XIII, apply for ERCs.

(12) Clean Fuel Adjustment to Starting Allocation

Any refiner who is required to make modifications to comply with CARB Phase II reformulated gasoline production (California Code of Regulations, Title 13, Sections 2250, 2251.5, 2252, 2260, 2261, 2262, 2262.2, 2262.3, 2262.4, 2262.5, 2262.6, 2262.7, 2263, 2264, 2266, 2267, 2268, 2269, 2270, and 2271) or federal requirements (Federal Clean Air Act, Title II, Part A, Section 211; 42 U.S.C. Section 7545) may receive (an) increase(s) in his Allocations except to the extent that there is an increase in maximum rating of the new or modified equipment. Each facility requesting an increase to Allocations shall submit an application for permit amendment specifying the necessary modifications and tentative schedule for completion. The Facility Permit holder shall establish the amount of emission increases resulting from the reformulated gasoline modifications for each year in which the increase in Allocations is requested. The increase to its Allocations will be issued contemporaneously with the modification according to a schedule

approved by the Executive Officer or designee (i.e., 1994 through 1997 depending on the refinery). Each increase to the Allocations shall be equal to the increased emissions resulting from the modifications solely to comply with the state or federal reformulated gasoline requirements at the refinery or facility producing hydrogen for reformulated gasoline production, and shall be established according to present and future compliance limits in current District rules or permits. Allocation increases for each refiner pursuant to this paragraph, shall not exceed 5 percent of the refiner's total starting Allocation, unless any refiner emits less than 0.0135 tons of NO_X per thousand barrels of crude processed, in which case the Allocation increases for such refiner shall not exceed 20 percent of that refiner's starting Allocation. The emissions per amount of crude processed will be determined on the basis of information reported to the District pursuant to Rule 301 - Permit Fees, for the same calendar year as the facility's peak activity year for their NO_X starting Allocation.

(d) Establishment of Year 2000 Allocations

(1) (A) The year 2000 Allocations for RECLAIM NO_X and SO_X facilities will be determined by the Executive Officer or designee utilizing the following methodology:

$$\text{Year 2000 Allocation} = \Sigma [A \times B_2] + \text{RTCs created from ERCs} + \text{External Offsets},$$

Where

A = the throughput for each NO_X or SO_X source or process unit in the facility for the maximum throughput year from 1987 to 1992, inclusive, as reported pursuant to Rule 301 - Permit Fees; and

B_2 = the applicable Tier I year Allocation emission factor for the subject source or process unit, as specified in Table 1 or Table 2.

(B) The maximum throughput year will be determined by the Executive Officer or designee from throughput data reported through annual emissions reports pursuant to Rule 301 - Permit Fees, or may be designated by the permit holder prior to issuance of the Facility Permit.

(C) To determine the applicable emission factor in Table 1 or Table 2, the Executive Officer or designee will categorize the

equipment at each facility based on information on hours of operation, equipment size, heating capacity, and permit information submitted pursuant to Rule 201 - Permit to Construct, and other parameters as determined by the Executive Officer or designee. No information used for purposes of this subparagraph may be inconsistent with any information or statement previously submitted on behalf of the facility to the District including but not limited to information and statements previously submitted pursuant to Rule 301 - Permit Fees, unless the facility can demonstrate, by clear and convincing documentation, that such information or statement was inaccurate.

(D) Throughput associated with each piece of equipment or NO_X or SO_X source will be multiplied by the Tier I emission factor specified in Table 1 or Table 2. If a factor lower than the factor in Table 1 or Table 2 was utilized for a given piece of equipment or NO_X or SO_X source pursuant to Rule 301, the lower factor will be used for determining that portion of the Allocation.

(E) The fuel heating value may be considered in determining Allocations and will be set to 1.0 unless the Facility Permit holder demonstrates that it should receive a different value.

(F) The year 2000 Allocation is the sum of the resulting products for each piece of equipment or NO_X or SO_X source multiplied by any inventory adjustment pursuant to paragraph (d)(4) of this rule.

(2) For facilities existing prior to October 15, 1993 which enter RECLAIM after October 15, 1993, the year 2000 Allocation will be determined according to paragraph (d)(1). The most recent two years reported emission fee data filed pursuant to Rule 301 - Permit Fees, may be used if 1989 through 1992 emission fee data is not available. For facilities lacking reported emission fee data, the Allocation shall be equal to their external offsets provided pursuant to Regulation XIII - New Source Review, not including any offsets in excess of a 1 to 1 ratio.

(3) No facility shall have a year 2000 Allocation [calculated pursuant to subdivision (d)] greater than the starting Allocation [calculated pursuant to subdivision (c)].

(4) If the sum of all RECLAIM facilities' year 2000 Allocations differs from the year 2000 projected inventory for these sources under the 1991

AQMP, the Executive Officer or designee will establish a percentage inventory adjustment factor that will be applied to adjust each facility's year 2000 Allocation. The inventory adjustment will not apply to RTCs generated from ERCs or external offsets.

(e) Allocations for the Year 2003

(1) The 2003 Allocations will be determined by the Executive Officer or designee applying a percentage inventory adjustment to reduce each facility's unadjusted year 2000 Allocation so that the sum of all RECLAIM facilities' 2003 Allocations will equal the 1991 AQMP projected inventory for RECLAIM sources for the year 2003, corrected based on actual facility data reviewed for purposes of issuing Facility Permits and to reflect the highest year of actual Basin-wide economic activity for RECLAIM sources considered as a whole during the years 1987 through 1992.

(2) No facility shall have a 2003 Allocation (calculated pursuant this subdivision) greater than the year 2000 Allocation [calculated pursuant to subdivision (d)].

(f) Annual Allocations for NO_X and SO_x and Adjustments to ~~NOx~~ RTC Holdings

(1) Allocations for the years between 1994 and 2000, for RECLAIM NO_X facilities shall be determined by a straight line rate of reduction between the starting Allocation and the year 2000 Allocation. For the years 2001 and 2002, the Allocations shall be determined by a straight line rate of reduction between the year 2000 and year 2003 Allocations. NOx Allocations for 2004, 2005, and 2006 are equal to the facility's 2003 Allocation, as determined pursuant to subdivision (e). Subsequent to the year 2006, NOx RTC Allocations and holdings shall be adjusted to the nearest pound as follows:

(A) The Executive Officer will adjust NOx RTC holdings, as of January 7, 2005 for compliance years 2007 and thereafter by multiplying the amount of RTC holdings by the following adjustment factors for the relevant compliance year, to obtain tradable/usable and non-tradable/non-usable holdings:

Compliance Year	Tradable/Usable RTC Adjustment Factor	Non-Tradable/ Non-Usable RTC Adjustment Factor
2007	0.883	0
2008	0.856	0.027
2009	0.829	0.054
2010	0.802	0.081
2011 and after	0.775	0.108

RTCs designated as non-tradable/non-usable pursuant to this subparagraph shall be held, but shall not be used or traded. The adjustment factors in this subparagraph are subject to change pursuant to paragraph (i)(5).

(B) Commencing on January 1, 2008 with NOx RTC prices averaged from January 1, 2007 through December 31, 2007, the Executive Officer will calculate the 12-month rolling average RTC price for all trades for the current compliance year. The Executive Officer will update the 12-month rolling average once per month. The computation of the rolling average prices will not include RTC transactions reported at no price.

(C) Notwithstanding the requirements of non-tradable/non-usable credits specified in subparagraph (f)(1)(A), in the event that the NOx RTC prices exceed $15,000 per ton based on the 12-month rolling average calculated pursuant to subparagraph (f)(1)(B), the Executive Officer will report to the Governing Board. If the Governing Board finds that the 12-month rolling average RTC price exceeds $15,000 per ton, then the incremental NOx reductions as specified in subparagraph (f)(1)(D) shall be converted to tradable/usable RTCs upon Governing Board concurrence. The Executive Officer's report to the Board will be made at a public hearing at the earliest possible regularly scheduled Board Meeting, but no more than 60 days from Executive Officer determination.

(D) The incremental NOx RTCs restored shall be the difference between the non-tradable/non-usable adjustment factors, as

specified in subparagraph (f)(1)(A), of the current compliance year and the most recent prior year the adjustment factor was implemented.

(E) RTC conversion pursuant to subparagraph (f)(1)(C) shall only occur in the compliance year in which Cycle 1 facilities are operating.

(F) Notwithstanding the adjustment factors required pursuant to subparagraph (f)(1)(A), beginning with the following December and each year thereafter that the Governing Board finds the $15,000 per ton NOx RTC price is exceeded pursuant to subparagraph (f)(1)(C), the Executive Officer will publish the applicable adjustment factors for the next compliance year beginning January 1. The adjustment factors will be published at a public hearing during a regularly scheduled Board Meeting. The adjustment factors will be determined as follows:

(i) If the 12-month rolling average falls below $15,000 per ton for at least 6 consecutive months, then the emission adjustment factors for the following compliance year shall equal the next more stringent adjustment factors listed in subparagraph (f)(1)(A) than the factors currently in effect; otherwise;

(ii) The next compliance year adjustment factors shall equal the compliance year adjustment factors currently in place.

The Executive Officer need no longer comply with the annual public hearing requirement once the adjustment factors for the 2011~~0~~ compliance year have been implemented for a 12-month period.

(G) The NOx RTC adjustment factors for compliance years 2008 through 2010 shall not be submitted for inclusion into the State Implementation Plan until the adjustments have been in effect for one full compliance year. The 2011 NOx RTC adjustment factors shall not be submitted for inclusion into the State Implementation Plan until 12-months after the adjustments have been in effect for one full compliance year.

(H) NOx Allocations for facilities that enter RECLAIM after January 7, 2005 for compliance years 2007 and after shall be determined

by applying the Tradable/Usable and Non-Tradable/Non-Usable RTC Adjustment Factors under subparagraph (f)(1)(A) to the facility's Compliance Year 2006 Allocation.

(2) Allocations for the years between 1994 and 2000, for RECLAIM SOx facilities shall be determined by a straight line rate at reduction between the starting Allocation and the year 2000 Allocation. For the years 2001 and 2002, the Allocations shall be determined by a straight line rate of reduction between the year 2000 and year 2003 Allocations. SOx Allocations year's 2004 through 2012 are equal to the facility's 2003 Allocations, as determined pursuant to subdivision (e). Subsequent to the year 2012, SOx RTC Allocations and holding shall be adjusted to the requested paid as follows:

Compliance Year	Adjustment Factor
2013 and after	The adjustment factors will be developed based on RTC reductions which will be established within the range of 3 tons per day to 8 tons per day.

(3~~2~~) New facilities initially totally permitted, on and after October 15, 1993, but prior to January 7, 2005, and entering the RECLAIM program after January 7, 2005 shall not have a rate of reduction until 2001. Reductions from 2001 to 2003, inclusive, shall be implemented pursuant to subdivision (e). New facilities initially totally permitted on or after January 7, 2005 using external offsets shall have a rate of reduction for such offsets pursuant to subparagraph (c)(5)(C). New facilities initially totally permitted on or after January 7, 2005 using RTCs shall have no rate of reduction for such RTCs, provided that RTCs obtained have been adjusted according to paragraph (f)(1) or (f)(2), as applicable. The Facility Permit for such facilities will require the Facility Permit holder to, at the commencement of each compliance year, hold RTCs equal to the amount of RTCs provided as offsets pursuant to Rule 2005.

(4~~3~~) Increases to Allocations for permits issued for Clean Fuel adjustments pursuant to paragraph (c)(12), shall be added to each year's Allocation.

(g) High Employment/Low Emissions (HILO) Facility

The Executive Officer or designee will establish a HILO bank funded with the following maximum total annual emission Allocations:

(1) 91 tons per year of NO_X

(2) 91 tons per year of SO_X

(3) After January 1, 1997, new facilities may apply to the HILO bank in order to obtain non-tradable RTCs. Requests will be processed on a first-come, first-served basis, pending qualification.

(4) When credits are available, annual Allocations will be granted for the year of application and all subsequent years.

(5) HILO facilities receiving such Allocations from the HILO bank must verify their HILO status on an annual basis through their APEP report.

(6) Failure to qualify will result in all subsequent years' credits being returned to the HILO bank.

(7) Facilities failing to qualify for the HILO bank Allocations may reapply at any time during the next or subsequent compliance year when credits are available.

(h) Non-Tradable Allocation Credits

(1) Any existing RECLAIM facility with reported emissions pursuant to Rule 301 - Permit Fees, in either 1987, 1988, or 1993, greater than its starting Allocation, shall be assigned non-tradable credits for the first three years of the program which shall be determined according to the following methodology:

Non-tradable credit for NO_X and SO_X:

Year 1 = $(\Sigma [A \times B_1])$ - 1994 Allocation;

Where:

A	=	the throughput for each NO_X or SO_X source or process unit in the facility from the single maximum throughput year from 1987, 1988, or 1993; and
B_1	=	the applicable starting emission factor, as specified in Table 1 or Table 2.
Year 2	=	Year 1 non-tradable credits X 0.667
Year 3	=	Year 1 non-tradable credits X 0.333
Year 4 and subsequent years	=	Zero non-tradable credit.

(2) The use of non-tradable credits shall be subject to the following requirements:

(A) Non-tradable credits may only be used for an increase in throughput over that used to determine the facility's starting Allocation. Non-tradable credits may not be used for emissions increases associated with equipment modifications, change in feedstock or raw materials, or any other changes except increases in throughput. The Executive Officer or designee may impose Facility Permit conditions necessary to ensure compliance with this subparagraph.

(B) The use of activated non-tradable credits shall be subject to a non-tradable RTC mitigation fee, as specified in Rule 301 subdivision (n).

(C) In order to utilize non-tradable credits, the Facility Permit holder shall submit a request to the Executive Officer or designee in writing, including a demonstration that the use of the non-tradable credits complies with all requirements of this paragraph, pay any fees required pursuant to Rule 301 - Fees, and have received written approval from the Executive Officer or designee for their use. The Executive Officer or designee shall deny the request unless the Facility Permit holder demonstrates compliance with all requirements of this paragraph. The Executive Officer or designee shall, in writing, approve or deny the request within three business days of submittal of a complete request and notify the Facility Permit holder of the decision. If the request is denied, the Executive Officer or designee will refund the mitigation fee.

(D) In the event that a facility transfers any RTCs for the year in which non-tradable credits have been issued, the non-tradable credit Allocation shall be invalid, and is no longer available to the facility.

(i) RTC Reduction Exemption

(1) A facility may file an application for Executive Officer approval to be exempted from all or a portion of the requirements pursuant to subparagraph (f)(1)(A) with the exception of RTC holdings as of January 7, 2005 for compliance year 2007 and thereafter in excess of the initial

allocation. For the purposes of this rule, initial allocation refers to the RTCs issued by the District to a facility upon entering the RECLAIM program. The application shall contain sufficient data to demonstrate to the satisfaction of the Executive Officer that the facility meets the following criteria:

(A) the facility has been in the program since the start of RECLAIM, or existed prior to 1994, but subsequently entered RECLAIM pursuant to Rule 2001 because facility emissions exceeded 4 tons per year;

(B) at least 99 percent of the facility's emissions reported for the most recent completed compliance year prior to the date of filing an application is from equipment not listed in Table 3 and the achieved emission rates for each and every piece of equipment at the facility is less than or equal to the 2000 (Tier I) Ending Emission Factor listed in Table 1 or the emission factor listed in Table 3, whichever is lower, for the corresponding equipment type;

(C) RTCs that were part of the total initial allocation for the facility have never been transferred or sold by the facility for year 2007 or later compliance years; and

(D) the cumulative NOx compliance costs incurred by the facility up to the submittal date of the application as specified in paragraph (i)(3) to comply with the RECLAIM Allocation as required under Rule 2004(b) and (d)(1) exceed the compliance costs that otherwise would have occurred to meet and maintain emission limits specified in Table 1 for each and every piece of equipment at the facility. The compliance costs shall be based on the following parameters:

(i) cost of controlling emissions using the parameters and procedures for determining total direct and indirect capital investment and total annual costs as specified in the most recent edition of the Control Cost Manual published by the U.S. EPA Office of Air Quality and Planning Standards, excluding control costs for any equipment listed in Table 3, if any;

(ii) realized and anticipated revenues and expenditures of the Facility Permit holder resulting from buying and selling any RTCs that are or were held by the facility where the contract of sale or purchase was executed prior to the date of application for exemption pursuant to paragraph (i)(1);

(iii) costs associated with compliance with the New Source Review provisions of Rule 2005, Rule 2012(c), or other applicable state or federal requirements shall not be included;

(iv) costs that result only in improving process efficiency or product quality, costs of projects that were initiated before the date the facility was subject to RECLAIM requirements, or legal costs or any other costs that do not directly reduce NOx emissions shall not be included; and

(v) any cost savings that resulted in implementing any NOx emissions strategy, such as fuel savings, increased production or sale; or

(2) A facility may file an application for Executive Officer approval to be exempted from all or a portion of the requirements pursuant to subparagraph (f)(1)(A) for the initial allocations portion of a facility's RTC holdings provided that the facility meets all of the following:

(A) The facility's starting and year 2000 Allocations were calculated using the same emission factors that are equal to or lower than the 2000 (Tier 1) emission factors listed in Table 1;

(B) Emission rate achieved for each source at the facility is less than or equal to the emission factors listed in Table 3 for the corresponding equipment type; and

(C) RTCs for 2007 or later compliance years for the facility have never been transferred or sold.

(3) A facility shall submit the applications specified pursuant to paragraphs (i)(1) or (i)(2) no later than July 7, 2005 or between January 1 and March 31, 2006, pay the appropriate evaluation fee pursuant to Rule 306, and accept enforceable permit conditions to ensure compliance with the provisions of this subdivision, in order for the Executive Officer to approve the exemption. If approved, the facility's initial RTC allocation shall be designated as non-tradable and additional RTCs purchased above

the initial allocation shall be subject to the RTC adjustments specified in subparagraph (f)(1)(A), as appropriate. The Executive Officer shall deny an application that is not filed within the time periods specified in this paragraph, lacks any information specified under paragraph (i)(7), or fails to demonstrate that it meets the requirements in paragraphs (i)(1) or (i)(2).

(4) Upon approval the exemption shall:

(A) be limited to the adjustment factors specified in subparagraph (f)(1)(A);

(B) begin the next compliance year following the exemption approval; and

(C) not apply to reductions resulting from future periodic BARCT review.

(5) RTC adjustments exempted pursuant to this subdivision shall be distributed proportionally among the remainder of the RTC holders and implemented two years from the compliance year of the applicable exemption and are subject to applicable paragraph (f)(1) provisions. Public notification of the distributed reductions shall occur at least one year prior to implementation.

(6) A Facility Permit holder has the right to appeal the denial of the exemption application to the Hearing Board in the same manner as a permit denial as specified in Health and Safety Code Section 42302.

(7) An application submitted to request an exemption from the RTCs reduction pursuant to paragraphs (i)(1) or (i)(2) shall include the following information.

(A) Detailed description of each project and itemized listing of how it relates to meeting the RECLAIM reduction requirements;

(B) Date of start and completion of each project listed in (A);

(C) Detailed calculations or emissions data demonstrating NOx emission reductions resulting from each project or combination of projects directly resulting in reductions. The emission levels achieved shall be based on actual CEMS data or source tests results;

(D) Itemized revenue and expenditures for each RTC trading activity since participation in the RECLAIM program;

(E) Itemized costs for each project and corresponding receipts or other equivalent documentation as approved by the Executive Officer for such expenditures; and

(F) Cost savings resulting from each project(s) (e.g. fuel savings, improved productivity, increased sales, etc.) and documentation of the values of such savings.

(8) A facility qualifying for exemption shall report as part of its Annual Permit Emission Program (APEP) report, submitted pursuant to Rule 2004(b)(4), whether or not emissions from equipment listed in Table 3, if any, remain less than or equal to 1 percent of the total facility emissions on an annual basis for the duration of the exemption. If the emissions exceed 1 percent, the facility shall be in violation of the rule for each and every day of the compliance year and the Executive Officer shall reduce the facility's initial allocation for the next compliance year to the emissions level specified for that year pursuant to subparagraph (f)(1)(A).

(9) A facility applying for exemption shall have 1 percent of its initial allocations subject to the requirements pursuant to subparagraph (f)(1)(A).

(10) Non-tradable RTC allocations designated pursuant to paragraph (i)(3) shall become tradable in the event the facility permanently ceases to operate.

Table 1

RECLAIM NO_X Emission Factors

Nitrogen Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Ems Factor *	2000 (Tier I) Ending Ems Factor *
Afterburner (Direct Flame and Catalytic)	Natural Gas	mmcf	130.000	39.000
Afterburner (Direct Flame and Catalytic)	LPG, Propane, Butane	1000 Gal	RV	3.840
Afterburner (Direct Flame and Catalytic)	Diesel	1000 Gal	RV	5.700
Agr Chem-Nitric Acid	Process-Absrbr Tailgas/Nw	tons pure acid produced	RV	1.440
Agricultural Chem - Ammonia	Process	tons produced	RV	1.650
Air Ground Turbines	Air Ground Turbines	(unknown process units)	RV	1.860
Ammonia Plant	Neutralizer Fert, Ammon Nit	tons produced	RV	2.500
Asphalt Heater, Concrete	Natural Gas	mmcf	130.000	65.000
Asphalt Heater, Concrete	Fuel Oil	1000 gals	RV	9.500
Asphalt Heater, Concrete	LPG	1000 gals	RV	6.400
Boiler, Heater R1109 (Petr Refin)	Natural Gas	mmbtu	0.100	0.030
Boiler, Heater R1109 (Petr Refin)	Fuel Oil	mmbtu	0.100	0.030
Boiler, Heater R1146 (Petr Refin)	Natural Gas	mmbtu	0.045	0.045
Boiler, Heater R1146 (Petr Refin)	Fuel Oil	mmbtu	0.045	0.045
Boiler, Heater R1146 (Petr Refin)	Refinery Gas	mmbtu	0.045	0.045
Boilers, Heaters, Steam Gens Rule 1146 and 1146.1	Natural Gas	mmcf	49.180	47.570
Boilers, Heaters, Steam Gens Rule 1146 and 1146.1	LPG, Propane, Butane	1000 gals	4.400	4.260
Boilers, Heaters, Steam Gens Rule 1146 and 1146.1	Diesel Light Dist. (0.05% S)	1000 gals	6.420	6.210
Boilers, Heaters, Steam Gens Rule 1146 and 1146.1	Refinery Gas	mmcf	51.520	49.840
Boilers, Heaters, Steam Gens	Bituminous Coal	tons burned	RV	4.800
Boiler, Heater, Steam Gen (Rule 1146.1)	Natural Gas	mmcf	130.000	39.460
Boiler, Heater, Steam Gen (Rule 1146.1)	Refinery Gas	mmcf	RV	41.340

* RV = Reported Value

** Does not include ceramic, clay, cement or brick kilns or metal melting, heat treating or glass melting furnaces.

*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

**** Newly installed or Modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

Nitrogen Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Ems Factor *	2000 (Tier I) Ending Ems Factor *
Boiler, Heater, Steam Gen (Rule 1146.1)	LPG, Propane, Butane	1000 gallons	RV	3.530
Boiler, Heater, Steam Gen (Rule 1146.1)	Diesel Light Dist (0.05%)	1000 gallons	RV	5.150
Boiler, Heater, Steam Gen (Rule 1146)	Natural Gas	mmcf	47.750	47.750
Boiler, Heater, Steam Gen (Rule 1146)	Refinery Gas	mmcf	50.030	50.030
Boiler, Heater, Steam Gen (Rule 1146)	LPG, Propane, Butane	1000 gallons	4.280	4.280
Boiler, Heater, Steam Gen (Rule 1146)	Diesel Light Dist (0.05%)	1000 gallons	6.230	6.230
Boiler, Heater, Steam Gen (R1146, <90,000 Therms)	Natural Gas	mmcf	RV	47.750
Boiler, Heater, Steam Gen (R1146, <90,000 Therms)	Refinery Gas	mmcf	RV	50.030
Boiler, Heater, Steam Gen (R1146, <90,000 Therms)	LPG, Propane, Butane	1000 gallons	RV	4.280
Boiler, Heater, Steam Gen (R1146, <90,000 Therms)	Diesel Light Dist (0.05%)	1000 gallons	RV	6.230
Boiler, Heater, Steam Gen (R1146.1, <18,000 Therms)	Natural Gas	mmcf	RV	39.460
Boiler, Heater, Steam Gen (R1146.1, <18,000 Therms)	Refinery Gas	mmcf	RV	41.340
Boiler, Heater, Steam Gen (R1146.1, <18,000 Therms)	LPG, Propane, Butane	1000 gallons	RV	3.530
Boiler, Heater, Steam Gen (R1146.1, <18,000 Therms)	Diesel Light Dist (0.05%)	1000 gallons	RV	5.150
Boiler, Heater R1109 (Petr Refin)	Refinery Gas	mmbtu	0.100	0.030
Boilers, Heaters, Steam Gens, (Petr Refin)	Natural Gas	mmcf	105.000	31.500
Boilers, Heaters, Steam Gens, (Petr Refin)	Refinery Gas	mmcf	110.000	33.000
Boilers, Heaters, Steam Gens, Unpermitted	Natural Gas	mmcf	130.000	32.500
Boilers, Heaters, Steam Gens, Unpermitted	LPG, Propane, Butane	1000 gallons	RV	3.200
Boilers, Heaters, Steam Gens ****	Natural Gas	mmcf	38.460	38.460

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*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

**** Newly installed or Modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

Nitrogen Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Ems Factor *	2000 (Tier I) Ending Ems Factor *
Boilers, Heaters, Steam Gens ****	Refinery Gas	mmbtu	0.035	0.035
Boilers, Heaters, Steam Gens ****	LPG, Propane, Butane	1000 gallons	3.55	3.55
Boilers, Heaters, Steam Gens ****	Diesel Light Dist (0.05%), Fuel Oil No. 2	mmbtu	0.03847	0.03847
Boilers, Heaters, Steam Gens, Unpermitted	Diesel Light Dist (0.05%)	1000 gallons	RV	4.750
Catalyst Manufacturing	Catalyst Mfg	tons of catalyst produced	RV	1.660
Catalyst Manufacturing	Catalyst Mfg	tons of catalyst produced	RV	2.090
Cement Kilns	Natural Gas	mmcf	130.000	19.500
Cement Kilns	Diesel Light Dist. (0.05% S)	1000 gals	RV	2.850
Cement Kilns	Kilns-Dry Process	tons cement produced	RV	0.750
Cement Kilns	Bituminous Coal	tons burned	RV	4.800
Cement Kilns	Tons Clinker	tons clinker	RV	2.73***
Ceramic and Brick Kilns (Preheated Combustion Air)	Natural Gas	mmcf	213.000	170.400
Ceramic and Brick Kilns (Preheated Combustion Air)	Diesel Light Distillate (.05%)	1000 gallons	RV	24.905
Ceramic and Brick Kilns (Preheated Combustion Air)	LPG	1000 gallons	RV	16.778
Ceramic Clay Mfg	Drying	tons input to process	RV	1.114
CO Boiler	Refinery Gas	mmbtu		0.030
Cogen, Industr	Coke	tons burned	RV	3.682
Electric Generation, Commercial Institutional Boiler	Distillate Oil	1000 gallons	6.420	6.210
Composite Internal Combustion	Waste Fuel Oil	1000 gals burned	RV	31.340
Curing and Drying Ovens	Natural Gas	mmcf	130.000	32.500

* RV = Reported Value

** Does not include ceramic, clay, cement or brick kilns or metal melting, heat treating or glass melting furnaces.

*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

**** Newly installed or Modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

Nitrogen Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Ems Factor *	2000 (Tier I) Ending Ems Factor *
Curing and Drying Ovens	LPG, Propane, Butane	1000 gals	RV	3.200
Delacquering Furnace	Natural Gas	mmcf	182.2***	182.2***
Fiberglass	Textile-Type Fibr	tons of material processed	RV	1.860
Fluid Catalytic Cracking Unit	Fresh Feed	1000 BBLS fresh feed	RV	RV*0.3 ***
Fluid Catalytic Cracking Unit with Urea Injection	Fresh Feed	1000 BBLS fresh feed	RV	(RV*0.3) / (1-control efficiency) ***
Fugitive Emission	Not Classified	tons product	RV	0.087
Furnace Process	Carbon Black	tons produced	RV	38.850
Furnace Suppressor	Furnace Suppressor	unknown	RV	0.800
Glass Fiber Furnace	Mineral Products	tons product produced	RV	4.000
Glass Melting Furnace	Flat Glass	tons of glass pulled	RV	4.000
Glass Melting Furnace	Tableware Glass	tons of glass pulled	RV	5.680
Glass Melting Furnaces	Container Glass	tons of glass produced	4.000	1.2***
ICEs****	All Fuels		Equivalent to permitted BACT limit	Equivalent to permitted BACT limit
ICEs, Permitted (Rule 1110.1 and 1110.2)	Natural Gas	mmcf	2192.450	217.360
ICEs Permitted (Rule 1110.2)	Natural Gas	mmcf	RV	217.360
ICEs, Permitted (Rule 1110.1 and 1110.2)	LPG, Propane, Butane	1000 gals	RV	19.460
ICEs, Permitted (Rule 1110.1 and 1110.2)	Gasoline	1000 gals	RV	20.130
ICEs, Permitted (Rule 1110.1 and 1110.2)	Diesel Oil	1000 gals	RV	31.340
ICEs, Exempted per Rule 1110.2	All Fuels		RV	RV
ICEs, Exempted per Rule 1110.2 and subject to Rule 1110.1	All Fuels		RV	RV
ICEs, Unpermitted	All Fuels		RV	RV
In Process Fuel	Coke	tons burned	RV	24.593
Incinerators	Natural Gas	mmcf	130.000	104.000
Industrial	Propane	1000 gallons	RV	20.890
Industrial	Gasoline	1000 gallons	RV	21.620

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*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

**** Newly installed or Modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

Nitrogen Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Ems Factor*	2000 (Tier I) Ending Ems Factor *
Industrial	Dist.Oil/Diesel	1000 gallons	RV	33.650
Inorganic Chemicals, H2SO4 Chamber	General	tons pure acid produced	RV	0.266
Inorganic Chemicals, H2SO4 Contact	Absrbr 98.0% Conv	tons 100% H2S04	RV	0.376
Iron/Steel Foundry	Steel Foundry, Elec Arc Furn	tons metal processed	RV	0.045
Metal Heat Treating Furnace	Natural Gas	mmcf	130.000	104.000
Metal Heat Treating Furnace	Diesel Light Distillate (.05%)	1000 gallons	RV	15.200
Metal Heat Treating Furnace	LPG	1000 gallons	RV	10.240
Metal Forging Furnace (Preheated Combustion Air)	Natural Gas	mmcf	213.000	170.400
Metal Forging Furnace (Preheated Combustion Air)	Diesel Light Distillate (.05%)	1000 gallons	RV	24.905
Metal Forging Furnace (Preheated Combustion Air)	LPG	1000 gallons	RV	16.778
Metal Melting Furnaces	Natural Gas	mmcf	130.000	65.000
Metal Melting Furnaces	LPG, Propane, Butane	1000 gals	RV	6.400
Miscellaneous		bbls-processed	RV	1.240
Natural Gas Production	Not Classified	mmcf gas	RV	6.320
Nonmetallic Mineral	Sand/Gravel	tons product	RV	0.030
NSPS	Refinery Gas	mmbtu	RV	0.030
Other BACT Heater (24F-1)	Natural Gas	mmcf	RV	RV
Other Heater (24F-1)	Pressure Swing Absorber Gas	mmcf	RV	RV
Ovens, Kilns, Calciners, Dryers, Furnaces**	Natural Gas	mmcf	130.000	65.000
Ovens, Kilns, Calciners, Dryers, Furnaces**	Diesel Light Dist. (0.05% S)	1000 gals	RV	9.500
Paint Mfg, Solvent Loss	Mixing/Blending	tons solvent	RV	45.600
Petroleum Refining	Asphalt Blowing	tons of asphalt produced	RV	45.600
Petroleum Refining, Calciner	Petroleum Coke	Calcined Coke	RV	0.971***
Plastics Prodn	Polyester Resins	tons product	RV	106.500
Pot Furnace	Lead Battery	lbs Niter	0.077***	0.062***
Process Specific	ID# 012183	(unknown process units)	RV	240.000
Process Specific	SCC 30500311	tons produced	RV	0.140

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*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

**** Newly installed or Modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

Nitrogen Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Ems Factor*	2000 (Tier I) Ending Ems Factor *
Process Specific	ID 14944	(unknown process units)	RV	0.512
SCC 39090003			RV	170.400
Sec. Aluminum	Sweating Furnace	tons produced	RV	0.300
Sec. Aluminum	Smelting Furnace	tons metal produced	RV	0.323
Sec. Aluminum	Annealing Furnace	mmcf	130.000	65.000
Sec. Aluminum	Boring Dryer	tons produced	RV	0.057
Sec. Lead	Smelting Furnace	tons metal charged	RV	0.110
Sec. Lead	Smelting Furnace	tons metal charged	RV	0.060
Sodium Silicate Furnace	Water Glass	Tons Glass Pulled	RV	6.400
Steel Hot Plate Furnace	Natural Gas	mmcf	213.000	106.500
Steel Hot Plate Furnace	Diesel Light Distillate (.05%)	1000 gallons	31.131	10.486
Steel Hot Plate Furnace	LPG, Propane, Butane	1000 gallons	20.970	10.486
Surface Coal Mine	Haul Road	tons coal	RV	62.140
Tail Gas Unit		hours of operation	RV	RV
Turbines	Butane	1000 Gallons	RV	5.700
Turbines	Diesel Oil	1000 gals	RV	8.814
Turbines	Refinery Gas	mmcf	RV	62.275
Turbines	Natural Gas	mmcf	RV	61.450
Turbines (micro-)	Natural Gas	mmcf	54.4	54.4
Turbines - Peaking Unit	Natural Gas	mmcf	RV	RV
Turbines - Peaking Unit	Dist. Oil/Diesel	1000 gallons	RV	RV
Utility Boiler	Digester/Landfill Gas	mmcf	52.350	10.080
Turbine	Natural Gas	mmcf	RV	61.450
Turbine	Fuel Oil	1000 gallons	RV	8.810
Turbine	Dist.Oil/Diesel	1000 gallons	RV	3.000
Utility Boiler Burbank	Natural Gas	mmcf	148.670	17.200
Utility Boiler Burbank	Residual Oil	1000 gallons	20.170	2.330
Utility Boiler, Glendale	Natural Gas	mmcf	140.430	16.000
Utility Boiler, Glendale	Residual Oil	1000 gallons	20.160	2.290
Utility Boiler, LADWP	Natural Gas	mmcf	86.560	15.830
Utility Boiler, LADWP	Residual Oil	1000 gallons	12.370	2.260
Utility Boiler, LADWP	Digester Gas	mmcf	52.350	10.080
Utility Boiler, LADWP	Landfill Gas	mmcf	37.760	6.910
Utility Boiler, Pasadena	Natural Gas	mmcf	195.640	18.500
Utility Boiler, Pasadena	Residual Oil	1000 gallons	28.290	2.670
Utility Boiler, SCE	Natural Gas	mmcf	74.860	15.600
Utility Boiler, SCE	Residual Oil	1000 gallons	10.750	2.240

* RV = Reported Value

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*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

**** Newly installed or Modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

Table 2

RECLAIM SO_X Emission Factors

Sulfur Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Emission Factor *	Ending Emission Factor *
Air Blown Asphalt		hours of operation	RV	RV
Asphalt Concrete	Cold Ag Handling	tons produced	RV	0.032
Calciner	Petroleum Coke	Calcined Coke	RV	0.000
Catalyst Regeneration		hours of operation	RV	RV
Cement Kiln	Distillate Oil	1000 gallons	RV	RV
Cement Mfg	Kilns, Dry Process	tons produced	RV	RV
Claus Unit		pounds	RV	RV
Cogen	Coke	pounds per ton	RV	RV
Non Fuel Use		hours of operation	RV	RV
External Combustion Equipment / Incinerator	Natural Gas	mmcf	RV	0.830
External Combustion Equip/Incinerator	LPG, Propane, Butane	1000 gallons	RV	4.600
External Combustion Equip/Incinerator	Diesel Light Dist. (0.05% S)	1000 gallons	7.00	5.600
External Combustion Equip/Incinerator	Residual Oil	1000 gallons	8.00	6.400
External Combustion Equip/Incinerator	Refinery Gas	mmcf	RV	6.760
Fiberglass	Recuperative Furn, Textile-Type Fiber	tons produced	RV	2.145
Fluid Catalytic Cracking Units		1000 bbls refinery feed	RV	13.700
Glass Mfg, Forming/Fin	Container Glass		RV	RV
Grain Milling	Flour Mill	tons Grain Processed	RV	RV
ICEs	Natural Gas	mmcf	RV	0.600
ICEs	LPG, Propane, Butane	1000 gallons	RV	0.350
ICEs	Gasoline	1000 gallons	RV	4.240
ICEs	Diesel Oil	1000 gallons	6.24	4.990
Industrial	Cogeneration, Bituminous Coal	tons produced	RV	RV
Industrial (scc 10200804)	Cogeneration, Coke	tons produced	RV	RV
Inorganic Chemcals	General, H2SO4 Chamber	tons produced	RV	RV
Inorganic Chemcals	Absrbr 98.0% Conv, H2SO4 Contact	tons produced	RV	RV

* RV = Reported Value

*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

Sulfur Oxides Basic Equipment	Fuel	"Throughput" Units	Starting Emission Factor *	Ending Emission Factor *
Inprocess Fuel	Cement Kiln/Dryer, Bituminous Coal	tons produced	RV	RV
Iron/Steel Foundry	Cupola, Gray Iron Foundry	tons produced	RV	0.720
Melting Furnace, Container Glass		tons produced	RV	RV
Mericher Alkyd Feed		hours of operation	RV	RV
Miscellaneous	Not Classified	tons produced	RV	0.080
Miscellaneous	Not Classified	tons produced	RV	0.399
Natural Gas Production	Not Classified	mmcf	RV	527.641
Organic Chemical (scc 30100601)		tons produced	RV	RV
Petroleum Refining (scc30600602)	Column Condenser		RV	1.557
Petroleum Refining (scc30600603)	Column Condenser		RV	1.176
Refinery Process Heaters	LPG fired	1000 gal	RV	2.259
Pot Furnace	Lead Battery	lbs Sulfur	0.133***	0.106***
Sec. Lead	Reverberatory, Smelting Furnace	tons produced	RV	RV
Sec. Lead	Smelting Furnace, Fugitiv	tons produced	RV	0.648
Sour Water Oxidizer		hours of operation	RV	RV
Sulfur Loading		1000 bbls	RV	RV
Sour Water Oxidizer		1000 bbls fresh feed	RV	RV
Sour Water Coker		1000 bbls fresh feed	RV	RV
Sodium Silicate Furnace		tons of glass pulled	RV	RV
Sulfur Plant		hours of operation	RV	RV
Tail gas unit		hours of operation	RV	RV
Turbines	Refinery Gas	mmcf	RV	6.760
Turbines	Natural Gas	mmcf	RV	0.600
Turbines	Diesel Oil	1000 gal	6.24	0.080
Turbines	Residual Oil	1000 gallons	8.00	0.090
Utility Boilers	Diesel Light Dist. (0.05% S)	1000 gallons	7.00	0.080
Utility Boilers	Residual Oil	1000 gallons	8.00	0.090
Other Heater (24F-1)	Pressure Swing Absorber Gas	mmcf	RV	RV

* RV = Reported Value

*** Applies retroactively to January 1, 1994 for Cycle 1 facilities and July 1, 1994 for Cycle 2 facilities.

Table 3

RECLAIM NO_X 2010 Ending Emission Factors

Nitrogen Oxides Basic Equipment	BARCT Emission Factor
Asphalt Heater, Concrete	0.036 lb/mmbtu (30 ppm)
Boiler, Heater R1109 (Petr Refin) >110 mmbtu/hr	0.006 lb/mmbtu (5 ppm)
Boilers, Heaters, Steam Gens, (Petr Refin) >110 mmbtu/hr	0.006 lb/mmbtu (5 ppm)
Boiler, Heater, Steam Gen (Rule 1146.1) 2-20 mmbtu/hr	0.015 lb/mmbtu (12 ppm)
Boiler, Heater, Steam Gen (Rule 1146) >20 mmbtu/hr	0.010 lb/mmbtu (9 ppm)
CO Boiler	85% Reduction
Delacquering Furnace	0.036 lb/mmbtu (30 ppm)
Fluid Catalytic Cracking Unit	85% Reduction
Iron/Steel Foundry	0.055 lb/mmbtu (45 ppm)
Metal Heat Treating Furnace	0.055 lb/mmbtu (45 ppm)
Metal Forging Furnace (Preheated Combustion Air)	0.055 lb/mmbtu (45 ppm)
Metal Melting Furnaces	0.055 lb/mmbtu (45 ppm)
Other Heater (24F-1)	0.036 lb/mmbtu (30 ppm)
Ovens, Kilns, Calciners, Dryers, Furnaces	0.036 lb/mmbtu (30 ppm)
Petroleum Refining, Calciner	0.036 lb/mmbtu (30 ppm)
Sec. Aluminum	0.055 lb/mmbtu (45 ppm)
Sec. Lead	0.055 lb/mmbtu (45 ppm)
Steel Hot Plate Furnace	0.055 lb/mmbtu (45 ppm)
Utility Boiler	0.008 lb/mmbtu (7 ppm)

Table 4
RECLAIM SOx 2014 BARCT

Basic Equipment	BARCT
Calciner, Petroleum Coke	Wet Gas Scrubbing Technology
Cement Kiln & Coal-Fired Boiler	Hybrid Dry Gas Scrubbing Technology (Scrubber & Baghouse), Dry Gas Scrubbing Technology, Wet Gas Scrubbing Technology
Container Glass Melting Furnace	Wet Gas Scrubbing Technology, Dry Gas Scrubbing Technology
Diesel Combustion	15 ppmv as required under Rule 431.2
Fluid Catalytic Cracking Unit	Wet Gas Scrubbing Technology, SOx Reducing Catalysts
Refinery Boiler/Heater	Wet Gas Scrubbing Technology, Fuel Gas Treatment Technology
Sulfur Recovery Units /Tail Gas Treatment Unit	Wet Gas Scrubbing Technology, Selective Oxidation Catalyst Technology
Sulfuric Acid Mfg	Wet Gas Scrubbing Technology